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24 July 1979

USSR Report

RESOURCES

No. 886



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ELECTRIC POWER AND POWER EQUIPMENT

BAYPAZINSKIY HYDROELECTRIC POWER PLANT

Moscow PRAVDA in Russian 8 Jun 79 p 1

[Article by O. Latifi (Tadzhikskaya SSR): "The Finish is Near"]

[Excerpt] "The power unit will be installed on time," stated V. Migurenko, chief of the Nurek section of the All-Union "Spetsgidroenergmontazh" Trust, "Our subcontractors -- the Khar'kov Turbine Plant and the "Ural-elektrotiyazhmash" promised to deliver the equipment on time. We are not going to delay the job. The plant will be put in operation a year ahead of schedule."

Everyone is now in a hurry and is bringing nearer the start-up of the last unit. Its wheel will begin to turn and the 2.7 million kilowatt plant will be in full operation. The dam is also being completed. It is already 270 meters high. Another 30 and it will reach design height. Then there will be the disturbing and somewhat sad moment of saying goodbye to the construction site. But many will not have to leave -- the Rogunskaya GES is being built nearby. The construction of still another power giant -- the Baypazinskaya Plant, will begin on the Vakhsh this year.

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ELECTRIC POWER AND POWER EQUIPMENT

COMPLETION OF NUREKSKAYA GES

Dushanbe KOMMUNIST TADZHIKSTANA in Russian 5 Jun 79 p 1

[Article by D. Chernysh: "Steel Kilometers"]

[Text] The hydraulic installers of Nurek and all the builders of the hydroelectric power plant are celebrating a holiday to mark an event for which they waited for almost 10 years: the ninth and last turbine water line is to be connected. But before the 40-ton giant pipe was laid underground, it was delivered by a special trailer to the central square -- for a solemn meeting. The city workers decided to mark this memorable day, the coming cherished finish -- the start-up of the GES at full strength. A city meeting dedicated to this event was held in Nurek.

There is still time before the meeting, and we are talking to Nikolay Ivanovich Bondarev who has just stepped out of the cab of the powerful K-700 tractor. He delivered the jubilee steel link. He is a man with an amazing labor biography. It was he who, in the now remote fall of 1969, delivered the very first Nurek turbine water pipeline -- the first steel link.

"Then it was immeasurably complicated," recalls Nikolay Ivanovich. "Everything, in fact, was for the first time. The tunnel itself, the 6-meter diameter pipe and the transportation facilities. The transporting-hoisting device came later, but at first there were the usual tractor and chassis of the plane."

That troublesome fall is still fresh in memory. An Il-18 chassis was procured in Tashkent. The first link of the water line was installed underground by the now famous brigade of Vladimir Khamliya. At that time, it took a month. The last links were installed by the youthful brigade of Vladimir Turkov: each in -- 5 days. The first and the hundreds of the following links, including the jubilee one, were manufactured by the same people of Vladimir Titov's brigade. They were followed by electric welders, such veterans as V. Tszyu and A. Gorbulyenko.

They also recall with gratitude the names of the first specialists who worked day and night with the collectives to install the Nurek water lines:

foreman Boris Mikhaylovch Oslapovskiy and then senior foreman, now chief engineer of the Tadzhikgidroenergostroy, Yanis Georgiyevich Chebanis, and many other pioneers of the Vakhsh construction work.

Specialists are trying to estimate the number of such links that were required for the water line complex. In any case -- about 1200 for the water line alone. On the side of the trailer there is painted, in large digits, the number -- 34,200 tons. This is how much structural metal was required by the hydraulic installers to cover 4.8 kilometers of nine tunnels with steel, and to lay the path for water to the vanes of the special design turbines.

...The solemn meeting really excited the hearts of its participants -- the creators of today's labor victory -- the hydraulic installers and those who work beside them, partners in the "Working Relay Race," the tunnel builders of the GES and guests. By putting in operation the ninth turbine water line a month ahead of schedule, the hydraulic installers are the first to complete their work on the basic structures of the Nurekskaya GES. They say goodbye gladly, yet with a slight sadness although the collective still has much to do.

The hydraulic installers were congratulated warmly by A. N. Malinov, first secretary of the Nurek party gorkom, Yu. K. Sevenard, chief of the "Nurekstroy" Administration, Sergey Tatarin, brigade leader of the "Gidrospetsstroy," foreman P. F. Kononykhin, political representative of the subcontractor, the Chekhovskiy "Gidrostat'konstruktsiya" Plant near Moscow, F. G. Kallulin, chief of the Tadzhik section of the "Gidromontazh" and others. It was noted at the meeting that with their success the hydraulic installers strengthened still another very important success: by their work volume on the Nurekskaya GES they completed their five-year plan ahead of schedule at the start of June.

Short exciting speeches were made, sincere congratulations expressed for everything accomplished and warm parting words spoken. And now the act is being signed and signatures are being inscribed under the symbolic certificate for the ninth and last water line. Then the heroes of the events are handed diplomas of the Nurek party gorkom and the All-Union "Gidromontazh" Trust, and albums and other souvenirs.

As the orchestra plays and the people applaud, the colorful train with the jubilee link departs. It passes through the city and disappears into the tunnel. Several days will pass. Vladimir Turkov's installers and Aleksey Gorbulyenko's electric welders will join the ninth and last link into one line. But even now they are being followed, helping and competing with them -- by the "Gidrospetsstroy" brigade of Sergey Tatarin. Its socialist obligation -- to strengthen the success of its partners in the "Labor Race" -- the hydraulic installers. They will complete the concreting of the ninth water line by the first of August. This decision was adopted at the construction site with great satisfaction. In these solemn hours of saying

"goodbye to Nurek," we and the heroes are thinking about the entire heroic, without exaggeration, path taken by the famous collective of the hydraulic installers on the shores of the Vakhsh. They began with bridges! Then -- the first never before seen construction of the tunnels which was unusually complicated. During construction, the hydraulic installers installed 63,400 tons of structural steel and equipment almost entirely underground. The collective grew and became stronger during the years and is distinguished today by its strong working friendship, high skills and political maturity.

Many significant accomplishments were achieved by the hydraulic installers that have left their mark and entered the invaluable treasure storehouse of the Nurek experience. It will faithfully serve the creators of another giant on the Vakhsh -- the Rogunskaya GES.

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ELECTRIC POWER AND POWER EQUIPMENT

ROVENSKAYA AES PROGRESS DETAILED

Kiev PRAVDA UKRAINY in Russian 13 Jun 79 p 2

[Article by V. Aleksandrov: "Forces of Subcontractors Should Be United"]

[Text] The first power unit of two turbogenerators with a total capacity of 440,000 kw at the Rovenskaya AES must be put in operation at the end of this year. Today over 7000 builders and installers are working on the site. In June it is planned to increase that number of workers by 1000.

The necessity of increasing the number of workers was dictated by a large lag in construction. Only two facilities -- the machinery hall and the water preparation department do not cause concern. It is planned to release the first 200,000 kw turbine for revision in June. The foundation was prepared for the second turbine and its installation will begin very soon.

Yet other facilities of the complex are, as they say, a debacle. In the main building the apparatus department is in a complex situation and the general construction work was delayed. Almost 30,000 cubic meters of wall are still to be poured and about 2000 tons of structural steel must still be installed. It should be taken into account that only after the building is completed will a front be opened for installing the basic technological equipment.

The Rovenskaya AES will operate with a circulating water supply. A 100,000 cubic meter per hour cooling tower is being erected for this purpose. It is not even half built as yet. A great volume of construction-installation work remains on the consolidated auxiliary building, the additional water pump, the purifying structures, external pipelines and other facilities.

The collective thinks that everything can be done on schedule. This belief is generated by many years of experience. Behind the majority of construction and installation brigades are the Arzhanakaya and Chernobyl'skaya AES, the Zaporozhakaya GRES and the Kievskaya TETs-5. Now they also

plan for high goals for themselves on the Rovenskaya AES construction site. It was decided to raise the main building to the height of an axis of action of a 250-ton overhead crane; install the crane by 10 July; complete the installation of steam generators no later than 1 August and install the reactor in the shaft by 5 August.

The problems are big and complex and they cannot be solved by "just wishing." The reliability of builders and installers, comradely help and a high level of organization and discipline from all subcontractors are required. The "Working Relay Race" must help in combining the efforts of the participants into one in the construction.

We will not say that they are not engaged in the "Working Relay Race" at the Rovenskaya AES. In its time, the party committee approved the regulation, assigned communists from the management staff, imposing on them the responsibility for organizing the competition. About five dozen brigades signed contracts and obligated themselves, in accordance with the relay race, to pass their high quality of work on to related workers on time or ahead of time, on the first presentation.

The slogan of the relay race is "From mutual claims -- to mutual help and support" also really materialized at the construction site. It was mentioned above that the construction of the apparatus department is behind schedule -- a section of the Yuzhenergomontazh cannot gather the necessary momentum by itself. A section of the "Yuzhteploenergomontazh (V. Dudnik, chief) came to the rescue. He switched 100 workers from installing technological equipment over to facing the walls of the reactor shaft with carbon steel.

Yet it should be acknowledged that the "Working Relay Race" did not gather full momentum at the Rovenskaya GES. They began to conclude contracts between brigades energetically, then cooled off on new jobs. Now only the trade union staff is involved or, speaking more precisely -- its chief, R. Malakhov.

"See this," -- Malakhov shows me a school notebook. "Here are recorded all the brigades from industrial, housing and municipal-personal service construction that are participating in the relay race. As many as we had, that's what we have. Yet 98 brigades, two-thirds of the working brigades, are not involved in the competition."

And what is very bad, the "Working Relay Race" did not involve the external group which would include collectives of many dozens of enterprises that supply building structures and products, lumber, pipes, equipment and other products.

At a meeting held at the end of May, I. Smotskiy, construction chief, and the managers of subcontractor organizations spoke bitterly about "Energostalkonstruktsiya" Trust enterprises that did not deliver 1596 tons of structural metal on time, including 530 tons from the Kiev Experimental Plant. The "Donbassenergostroyindustriya" did not manufacture sets of wall panels on

time for the main building. Complaints were made to the Sumsk "Nasosenergo-mash" Production Association that delayed the supply of machines since last year and to other machine building plants. P. Falaleyev, first deputy of the USSR Ministry of Power and Electric Power Plants who was present at the meeting remarked:

"It is bad, of course, when suppliers fail to deliver. But you must understand that it is also your fault. You are not utilizing the 'Working Relay Race' fully at the enterprise."

He is correct; nothing can be said against that.

V. Sukhonosenko, partkom secretary of the construction, speaks about the committee which, at its meetings, has criticized the communists many times who were made responsible for the "Working Relay Race." The demands on them are obviously high. But should they alone really be held responsible? Comprehensive socialist competition approved by the CC CPSU is everybody's business and everybody should be involved in its organization, especially managers.

The "Working Relay Race" is as necessary as air for the construction of the Rovenskaya AES where so much remains to be finished, where tens of thousands of various building structures, materials and 45 million rubles worth of equipment have still not been delivered. Every effort must be exerted. Therefore, only the relay race can coordinate and unite all efforts and force all construction participants to work responsibly and fulfill their obligations on time.

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ELECTRIC POWER AND POWER EQUIPMENT

KANSKO-ACHINSK COMPLEX

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Apr 79 p 2

[Article by TASS]

[Text] "Basic directions for developing the USSR in 1976-1980," approved by the 25th party congress specified the accelerated creation of the Kansk-Achinsk fuel-power complex and the construction of large thermal electric power plants burning Kansk-Achinsk coal.

On this basis, the CC CPSU and the USSR Council of Ministers adopted a decree "On creating the Kansk-Achinsk fuel-power complex." As noted in the decree, its formation will facilitate the solution of one of the most important key national economic problems on developing the fuel-power base of the country and the further development of production forces in Siberia.

The CC CPSU and the USSR Council of Ministers acknowledged the necessity of utilizing the latest achievements of science and technology and implementing all the necessary measures to protect the environment when building and operating enterprises and facilities.

The decree set concrete goals for creating the fuel-power complex in 1979-1990. It specifies the construction of high capacity coal open-cuts, large thermal electric power plants, electric power transmission lines and electric substations for distributing the electric power produced by the electric power plants in the Siberian regions, as well as RRs, construction materials industry enterprises and a production base for construction and installation organizations. A large volume of work is planned on creating the necessary housing and cultural-personal service conditions for the workers of the city of Sharypovo, located near the coal open-cuts and electric power plants which will be transformed into a modern city of miners and power workers. A higher regional wage coefficient is being set for the workers in the construction and operation of enterprises and facilities within the complex.

Party, Soviet and economic organs must help, in every possible way, organizations of the USSR Ministry of the Coal Industry, the USSR Ministry of Power and Electrification, the USSR Ministry of Installation and Special

Construction Work, the USSR Ministry of Construction of Heavy Industry Enterprises and the Ministry of Transport Construction in doing the work imposed by the creation of the Kansk-Achinsk fuel-power complex. The Krasnoyarskiy kraykom of the CPSU and the Krasnoyarskiy krayispolkom were instructed to develop work widely to mobilize the workers of the kray for the successful implementation of the tasks on creating the complex, paying special attention to the timely completion of housing, cultural-personal service and municipal facilities in Sharypovo.

It was recommended to the Komsomol Central Committee that it become the patron of the construction of the most important enterprises and facilities of the complex.

The CC CPSU and the USSR Council of Ministers expressed their assurances that party, trade union and Komsomol organizations, and all the workers in the construction of enterprises and facilities for the Kansk-Achinsk fuel-power complex, having developed socialist competition, will fulfill with honor the responsible task of building this large complex in Siberia that is of high-priority importance to the government.

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ENERGY CONSERVATION

OUTLOOK ON ENERGY CONSERVATION IN UKRAINE GIVEN

Kiev PRAVDA UKRAINY in Russian 20 Jun 79 p 1

[Editorial: "Conserve Fuel and Power"]

[Text] From year to year the country's national economy requires more and more raw material and fuel and power resources. And although our underground deposits are rich and the extraction of oil, gas, and coal, and the production of electric power are increasing in scale, at high rates, we still cannot satisfy fully our own need for fuel, electrical and heat energy. This told especially on the past severe winter.

In the resolution passed by the CPSU Central Committee and the USSR Council of Ministers, "On Providing the National Economy and the Population with Fuel, Electrical and Heat Energy in the Fall-Winter Period of 1979-1980," concrete measures are outlined called upon to create all the conditions for fulfillment and overfulfillment of the planning assignments of the fourth year of the five-year plan regarding extraction, production and delivery of fuel to the consumers, the creation of the necessary reserves of it at electric power plants, at industrial enterprises, and regarding further increasing the country's fuel and energy potential. Stressed with especial force in the resolution is the necessity of increasing in every way the economical expenditure of fuel and power, of oil products, of establishing the strictest control over their rational utilization.

Workers in the Soviet Ukraine, enerring the fourth year of the five-year plan, have accepted high obligations. It has been resolved to extract above the plan 5 million tons of coal, a large amount of oil and gas, to economize in the republic's national economy 2.6 million tons of standard fuel, 4.4 billion kilowatt-hours of electric power and 8 million gigacalories of heat energy, 240,000 tons of motor vehicle gasoline, and 160,000 tons of diesel fuel.

Although these are high goals, they are completely realistic. The successes of the republic's foremost collectives are convincing of this. Thus, operating well ahead of their pledges are miners of the

Donetskugol', Donbassantratsit, and Torezantratsit associations, the Trudovskaya and Molodogvardeyskaya mines and others. But the tons of coal added to the heap in addition to the plan by their heroic labor in large part go to cover the debt which is growing from month to month in the Stakhanovugol', Krasnoarmeyskugol' and Artemugol' associations, at the Maksimovskaya, imeni Dimitrov, Krasnopol'yevskaya mines and others.

In each individual case it is possible, of course, to find the so-called objective justification for the disruption in fulfillment of the plan assignments and pledges. But the national economy does not need justifications, but rather fuel for electric power plants and everyday life, raw material for blast furnaces. The communists in the sector, the city committees and party committees of the Donets Basin should at this time, as is required by the resolution of the CPSU Central Committee, "On a Further Improvement in Ideological and Political Education Work," stir up a Stakhanov striving toward record work for literally each miner, each leader of a brigade, sector or mine.

Along with the measures for increasing the reliability of supply of electrical and heat energy, it is stated in the resolution of the CPSU Central Committee and the USSR Council of Ministers, their rational and economical expenditure has primary significance.

"Every communist, every economic and party worker should worry about the national wealth," comrade L.I. Brezhnev stressed at the November 1978 Plenum of the CPSU Central Committee. "And whoever does not do this should be held accountable according to all the strictness of the party Rules and our Soviet laws."

In our republic this important economic and political campaign is being waged successfully by the activists of the press, television and radio jointly with the Ukrainian Council of Trade Unions, the People's Control Committee, the State Committee for Labor and the Central Committee of Lenin Young Communist League of the Ukraine. They are showing a great deal of initiative, they are making concrete proposals about further strengthening the regime of saving. Deserving very broad support is the initiative of a group of front-ranking workers and innovators in the republic, who have made an appeal to develop a competition this year under the slogan: "Work one or two days each quarter on economized supplies and raw material, and one day a month on economized fuel and electric power."

The value of this initiative, which has received the high praise of the Central Committee of the Communist Party of the Ukraine, is in the clarity and concrete nature of the goals, for the attainment of which it is necessary to struggle. The oblast committees, city committees and rayon committees of the party, the executive committees of the soviets of people's deputies, the Ukrainian Council of Trade Unions and the Central Committee

of the Lenin Young Communist League of the Ukraine must conduct at the enterprises and construction sites extensive organizational and training work for creation of special savings accounts and creation of a savings fund in each labor collective.

Thrift is a political category. The mass concern of the workers about preservation and increasing the public wealth, about growth in labor productivity was regarded by Vladimir Il'ich Lenin as one of the decisive guarantees of the strength of the Soviet regime, of our political system.

Thrift is a moral trait, a moral-ethical trait. To be thrifty means to possess the sense of a zealous master of the country, to be intolerant when due to anyone's negligence, carelessness or indifference electric power is expended needlessly, when fuel escapes from the storage tanks, when valuable raw material is discharged onto dumps or into the atmosphere.

At many enterprises and construction sites of the republic thrifty, rational utilization of fuel and power has become an absolute rule of operation, the very first concern of the primary party organizations. Showing a good example are the collectives of the Zaporozhskaya GRES, the Kiev Plant for Automatic Machine Tools imeni Gor'kiy, the Iatskiy Electric Apparatus Plant, and the Voroshilovgrad Production Association for diesel locomotive building. The railroad workers of the L'vov trunk line and the transport divisions of the Ukrzapadugol' and L'vovenergo associations are competing for the most effective utilization of rolling stock and accelerated delivery of fuel from mines of the L'vovsko-Volynskiy Basin to the Burshtynskaya GRES.

However very strict control over rational utilization of fuel, power and oil products has been set up far from everywhere. In ferrous metallurgy, in machine building, in the chemical, light and food industry, in other sectors there are still many enterprises where due to non-observance of technological regimes, the use of out-dated equipment, and incomplete loading of equipment there are great losses of fuel and of power resources. The party and government are setting the goal of creating a reliable barrier to losses at each enterprise, at each job site. Proceeding correctly are the ones where even now they are preparing for the coming winter: they are putting in order the heating networks, the systems of central heating, ventilation and hot water supply.

The regime of saving is the law of socialist operation, the most important condition of development of the national economy, of improving the nation's welfare. There is no other way. Therefore the party organizations in outlying areas, the trade unions and soviets of people's deputies are called upon to give the greatest attention to the slogan of the day: for each worker, a personal savings account; for each collective, a thrift fund!

ENERGY CONSERVATION

FUEL, POWER CONSERVATION NEEDS STRESSED

Moscow IZVESTIYA (in Russian 15 Jun 79 p 1

[Editorial: "Conserve Fuel and Power"]

[Text] The fuel and power base of our homeland has no equals. With each year it steadily gains strength, meeting the needs of the national economy. Our underground deposits are rich. But the deposits as a rule are located far from the industrial regions, and their development requires huge expenditures. This is why, stated comrade L.I. Brezhnev, in order not to proceed to an excessive increase in capital investments, it is necessary to attain more economical expenditure of resources.

The implementation in the Tenth Five-Year Plan of measures for improving the fuel and power balance and for fuller utilization of resources will yield in 1980 over 160 million tons of standard fuel. This will make it possible to insure a normal energy supply for the country, and will create the conditions for steady growth of all sectors of industry. For the time being the national economy will continue to put a ceiling on energy and fuel. This was affected especially by the past severe winter.

In the published resolution of the CPSU Central Committee and the USSR Council of Ministers, "On Providing the National Economy and the Population with Fuel, Electrical and Heat Energy in the Fall-Winter Period of 1979-1980," concrete measures were outlined called upon to insure fulfillment and overfulfillment of the planning assignments of the current year for extraction, production and transport of fuel, and also an uninterrupted increase in fuel and power and other raw material resources necessary for dynamic development of the country's economy. Stressed in it with especial force was the necessity of intensifying in every way the regime of a saving of fuel, heat and power.

A zealous attitude toward physical resources is an important condition for further development of the economy, for improving the nation's welfare. The practice of economic construction yields many convincing examples of how resources should be used. By improving the technology of coal extraction, by being concerned about the conditions of its storage and transport, the miners of Kemerovskaya Oblast are achieving significant results in

reducing the expenditure of electric power, coal, gasoline, mazut, and diesel fuel. Their know-how has been approved by the CPSU Central Committee. Being realized successfully are the plans for a saving of fuel and electric power at enterprises in the capitals: the motor vehicle plants imeni A.I. Likhachev and imeni Leninskiy Komsomol, and at the Stankolit Plant for Aluminum Alloys. Just in the past year workers in Moscow were able to save over 300,000 tons of standard fuel. Deserving of attention is the experience of Magnitka, the West Siberian metallurgical plant. Here they are persistently improving technological processes, they are automating production, bringing the capacities of electric drive and the equipment into correspondence, and on this basis they are reducing the expenditures of raw material. The All-Union public review of the effectiveness of utilization of resources, conducted annually by the Central Committee of the Komsomol and the All-Union Central Council of Trade Unions, is yielding good results.

Along with this there are great and unutilized reserves. In the country there are many large enterprises where a large amount of electricity and heat is expended inefficiently due to incomplete loading, and down times of equipment. It has not become an absolute rule everywhere to have strict observance of technological processes, of rational regimes of loads in the power systems. Much fuel is consumed by the housing and municipal economy, much of it is expended there to no purpose. But yet only one percent of the heat saved in residential and working facilities just on the basis of proper application of the control valves of heating devices is equivalent to the saving of more than 600,000 tons of coal. It is no accident that in the resolution the attention of Soviet and economic leaders is directed to how important it is to put in order, prior to the onset of the fall-winter period, the heating networks, and systems of heating, ventilation and hot water supply.

The task is to make insuring the strictest regime of saving the daily concern of all enterprises, of all workers. At the plants, factories, mines, in transport, among the main consumers of physical resources it is necessary to activate the work of inspection commissions, inspection brigades, and people's control groups for checking organizational and technical measures aimed at reducing the expenditures of fuel and power. It is necessary to have a strict and comprehensive record of the use of resources, and rigid standards for their consumption. Soviet, economic and trade union organizations are obliged to be in charge of and take under unrelenting control the course of the socialist competition in the campaign for thrift, more effectively to use material and moral incentives for achievement of high results in the matter of seeking additional fuel resources and their economical utilization, to give more attention to observance of planning discipline, and strictly to hold the executors responsible for a formal attitude toward utilization of fuel and power resources and the possibilities of increasing them,

and also regarding a reduction in the losses of fuel during extraction, storage and transport.

To save on the large scale and the small scale, to put a reliable block in the way of large and small losses of coal, oil, gas, heat and electricity--this is the important requirement of the day, the duty of each Soviet citizen.

10908

CSO: 1822

ENERGY CONSERVATION

MHD-GENERATORS AS ENERGY SOURCE DESCRIBED

Moscow IZVESTIYA in Russian 30 Mar 79 p 3

[Article by academician A. Sheyndlin, director of the Institute of High Temperatures of the USSR Academy of Sciences: "For Power Engineering of the Future"]

[Text] As is known, the level of economic development of the country, the perfection of applied technologies and the productivity of labor are determined to a significant degree by the amount of electric power produced. For this reason in the decisions of the congresses of our party, in the state plans of development of the national economy unfailingly much attention is given to increasing the capacities of electric power engineering in the country. In connection with this a sharp increase in the effectiveness of utilization of fossil and nuclear fuel for production of electric power takes on even more important significance with every year.

The chemical energy of fossil fuels--coal, oil gas, just as the nuclear energy of fission (and subsequently also of synthesis), as a rule, at the electric power plants first has to be converted to heat energy. The effectiveness of the process of transforming heat energy into useful work is determined first of all by the highest temperature of the steam or gas working in the power installation.

In modern steam-turbine blocks of heat and atomic electric power plants the temperature of the water vapor does not exceed 600 degrees Celsius. Correspondingly also the effectiveness (efficiency factor) of such electric power plants cannot be higher than 40 percent. As a result not less than 60 percent of the energy of the fuel is uselessly dispersed into the environment. It should be said that raising the temperature of the water vapor operating in steam-turbine units of electric power plants, and this means also their efficiency factor, has practically reached its limit.

Advances in a number of fields of science and technology have made it possible comparatively recently to propose a fundamentally new,

magnetohydrodynamic (MHD) method of converting heat energy directly into electrical without the use of any kind of rotating parts, operating at high temperatures. The essence of this method, now quite well known, makes it possible sharply to raise the temperature of the working body. A magnetohydrodynamic generator, in which a flow of gas is created, heated to 2500-3000 degrees Celsius, in combination with an ordinary steam-turbine unit makes it possible even now to obtain an efficiency factor of the electric power plant on the order of 50 percent (in time it may reach even 60 percent). Thereby a huge economic benefit is provided.

The penetration of the MHD-method of energy conversion in the zone of working temperatures considerably exceeding those which have been attained in the traditional power units places this method beyond competition with any of the existing ones. In the case of improvement of other units it is advantageous to combine them with an MHD-generator.

Even now it is possible widely to use the MHD method of energy conversion with the use of fossil-fuels: at the first stage of pure gaseous fuels, and at the second, most important stage with the broad use of coals, particularly Kansk-Achinsk coals. For this reason the introduction of MHD-electric power plants in power engineering is taking on priority significance.

The advantages of the MHD method of producing electric power are so obvious that even after the appearance of the first projects at the beginning of the sixties intensive studies in this field began in the Soviet Union, the United States and a number of other industrially developed countries. Foreign specialists have concentrated their attention only on the MHD-generator proper, in order to demonstrate the fundamental possibility of industrial production of electric power by the magnetohydrodynamic method. Tests have been set up at large installations, calculated, however, for a very short operating time. As a result it has been shown that the MHD-generators are fully suitable for industrial production of electric power.

In the Soviet Union this task has been solved differently, on the basis of a complex program. Here in our country since the very beginning a broad group of questions was determined, on the solution of which depended the introduction of the MHD method in power engineering. Built back in 1964 was a model power installation with an MHD generator, the U-02. It included all the elements of an electric power plant with an MHD-generator.

This is a rather large experimental installation, operating on products of combustion of natural gas.

The central object at the installation, of course, was the MHD-generator. The study of it from the very beginning was directed at the creation of a highly-effective and reliable design, capable of operating for an extended period. Studied in parallel with the MHD-generator was practically the

whole complex of basic equipment of power MHD installations. Obtained in very short periods was a huge volume of information on almost all aspects of the problem.

The important steps in development of the projects aimed at creation of MHD electric power plants were the erection and putting into operation of the world's first experimental-industrial MHD installation, the U-25. In essence it is an electric power plant.

In 1975 the capacity of the U-25 MHD generator was brought up to the planned figure--20,000 kilowatts. Further studies on the new installation were aimed at studying the features of operation of the MHD channel and other elements of it in prolonged regimes. The duration of uninterrupted operation of the installation in experiments with release of capacity from the MHD-generator of up to 10,000 kilowatts has now been brought up to 250 hours. The total time of its operation exceeds 10,000 hours. Checked out as a result has been not only the MHD-generator proper, but also practically all the other elements of the heating loop and the electrical circuit. This know-how can be used successfully during the creation of industrial MHD electric power plants.

Comprehensive study of the problem has made it possible for Soviet specialists to hold the generally recognized leading position in the world. This is why during conclusion of an intergovernmental agreement between the USSR and the United States on scientific and technical cooperation in 1972 the American side proposed to include in this agreement a section on MHD generation of electric power. Now such cooperation between the two countries is being developed successfully. The Soviet side has granted American specialists the opportunity to conduct a number of important studies on the unique Soviet U-02 and U-25 MHD installations.

The American side in the framework of this agreement has designed, manufactured and supplied to the Soviet Union a superconducting magnetic system, the only one of its kind, with a total weight of more than 40 tons and with the length of the magnet at 4 meters. This is a prototype of magnet systems of future MHD electric power plants.

At present Soviet and American scientists are conducting successful experiments on a new installation, including a heating loop with a powerful MHD channel of an original Soviet design and the mentioned superconducting magnetic system.

The next thing now is the following stage--the planning and creation of industrial MHD electric power plants. The Moscow department of Teplo-elektroproyekt [All-Union Institute for Planning Electrical Equipment for Heat Engineering Structures] of the USSR Ministry of Power under the scientific direction of the Institute of High Temperatures of the USSR Academy of Sciences has already performed technico-economic validation of the pilot block of an electric power plant with a MHD generator, with a total electrical capacity of half a million kilowatts.

To be used in the composition of the first industrial MHD power block is a standard condensation turbine, the K-300, with a capacity of 300,000 kilowatts. The capacity of the MHD generator will also be on the order of 300,000 kilowatts. Taking into account the expenditure of energy for the compressor and other in-house needs, this also makes up the total capacity of a 500,000 kilowatt block. The expected efficiency factor of the energy block in the condensation regime is more than 10 percent higher than for a traditional steam-turbine block. Thereby a 23 percent fuel saving will be guaranteed. For this reason although the capital investments per unit of installed capacity for the MHD power block will be somewhat higher than usual, ultimately the national economy will gain a great saving. Let us add that the cited indicators are far from the limit for future magnetohydrodynamic electric power plants.

The problem of setting up MHD electric power plants on the science level has already been solved to a significant degree. Now a word for our industry. We do not want to depreciate the difficulties facing it on the way to realization of the idea of the new method of producing electric power. And although when working out the draft of the pilot MHD power block and its technico-economic validation the planners did not go beyond the limits of the possibilities of modern technology, the creation of an electric power plant of a new type is a complicated technical problem.

Apparently, the main burden in this matter falls on the shoulders of enterprises of the Ministry of Power (Minergo), the Ministry of the Electrical Equipment Industry (Minelektrotekhprom), the Ministry of Power Machine Building (Minenergomash), the Ministry of Ferrous Metallurgy (Minchernmet) and certain others. Even now it is necessary to enlist all the creative forces of the collectives of production enterprises for the solution of the very important national economic task. This requires extensive organizational work from the leaders of our industry. But only in this way is it possible to guarantee success in such a new and difficult matter as introducing into the country's power engineering a fundamentally new technology of electric power production.

The ultimate goal is worth all the effort which will be required in order to attain it. A saving in the production of electric power, 20-25 percent of the critical fossil fuel, on the scale of the country this is a grandiose task, the successful solution of which depends on our common efforts.

D 908
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ENERGY CONSERVATION

LOSSES REDUCED IN TADZHIK ELECTRICAL NETWORKS

Dushanbe KOMMUNIST TADZHIKSTANA in Russian 6 Jun 79 p 1

[Article by S. Sanin: "Losses Reduced in Electrical Networks"]

[Text] The collective of Tadzhikglavenergo [Tadzhik Main Power Supply Administration] is devoting considerable attention to a saving of electric power, that consumed for its own needs, and also during the transmission of the electric power to the consumers. Since the beginning of the five-year plan 100 million kilowatt-hours has been saved. In order to produce such an amount of electric power it is necessary for all the electric power plants of the Gorno-Badakhshanskaya Autonomous Oblast to operate about two years.

The basic direction in the battle for saving energy is lowering the losses of it in the networks. Here too the toilers of the electrical network regions have done much during the years of the five-year plan. On many electric power lines the voltage has been increased, steel wires have been replaced by aluminum, part of the electric power lines has been connected, and transformers which did not have a full load have yielded to other, economical ones. Many measures for reconstruction of the networks, for reducing the losses in them were carried out by the collectives of the Dushanbe-Vakhshskiy and Leninskiy network regions, the length of electric power lines in which comes to 1,500 kilometers.

Also at the republic's electric power plants definite work has been done to save the electric power going for in-house needs. Utilized in selecting the optimum operating regimes of the equipment are the calculations of the electronic computer center of Tadzhikglavenergo.

10908
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ENERGY CONSERVATION

ASHKhabAD MACHINE OPERATOR TELLS ABOUT SAVING FUEL

Moscow IZVESTIYA in Russian 5 Jun 79 p 2

[Article by B. Shutov, machine operator of the steam boiler of block 313, holder of the Order of Labor Red Banner, Ashkhabad "Save Fuel"]

[Text] The master of the economy can be the one who knows how to economize in the state sense of the word: not only in large things, but also in small things. Economics and economy, as has been remarked accurately by comrade L.I. Brezhnev, are not words with the same root by accident. It is not necessary to go far for an example.

In the boiler works where I have been working for seven years a planned struggle is being waged for economic indicators. It is necessary to say that they are getting worse from year to year, and we are not at fault in this. While five or six years ago one boiler was enough for supplying hot water and heating, now two are needed. The fact is that additional hot water is not going into the bank of boilers, but it is being dispersed for non-plan domestic needs. In order to make up the losses in the heating network, we have been forced daily to pump up to 500 cubic meters of cold water. The heating of it requires 400-500 cubic meters of gas per hour, and this costs rubles. And gradually the rubles mount into the hundreds. And during the heating season for our boiler works alone it runs up to 20,000 rubles. The amounts are impressive if you consider that operating in Ashkhabad are 16 boilers similar to ours, and over 500 smaller ones. And in each one, the colleagues complain, the evil is the pumping. It has been estimated that throughout the city these losses in monetary terms come to hundreds of thousands of rubles.

How can this be combatted? By resolutions from various ranks--from the rayon scale to the republic, with common words, with the same wishes: "Increase the struggle against misappropriations of heat, close the route of its escape." What good are these words?

"Boris," one day an old lady from a neighboring building ran up to me-- covered with water: "the pipe broke, the apartment is being flooded..."

I shut down, and went to look. An "everyday story:" cutting into the radiator was the cock for discharging hot water; under pressure it had been driven out. "A swindler," it is said, "brought it, the five-note was stolen for nothing." And this is not just in one building. Gradually the number of such cocks is increasing. This will cost the state, I repeat, hundreds of thousands of rubles.

The saving of resources is a common concern. It is time for the executive committee of the city soviet and the republic Ministry of Municipal Economy to take effective measures for eradication of cases of stealing heat.

10908
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ENERGY CONSERVATION

NEED FOR ECONOMICAL UTILIZATION OF FUEL IN AGRICULTURE DISCUSSED

Moscow TRUD in Russian 24 Apr 79 p 1

[Article: "Use Fuel Economically, An Urgent Topic"]

[Text] Spring field operations are now under way on our country's crop-lands. Agriculturalists are striving to complete their sowing within the optimum periods and to accomplish them with a high degree of quality. But even during this time of feverish activity we cannot lose sight of the need for the efficient utilization of fuel and lubricants.

The decree of the CC CPSU and the Council of Ministers of the USSR on "Additional Measures With Respect to Preparing and Conducting Spring Field Operations in 1979" deals in particular with the need to eliminate deficiencies in the record keeping, storage and consumption of petroleum products; to develop and implement measures insuring the secure storage of fuel and lubricants; and to prevent the overconsumption of these resources.

The cost of fuel and lubricants accounts for one-third of the total expenditure for the operation of the machinery and tractor fleet. It is therefore important to expend our fuel in an efficient manner.

The operational procedures followed by the machine operators on the kolkhoz imeni Michurin in Rostovskaya Oblast's Krasnosulinskiy Rayon may serve as an example of how petroleum products should be utilized. They came out as initiators for developing socialist competition on a more widespread basis to work for economy and thrift in the conduct of operations; they resolved to operate five days on the fuel saved. This initiative has been taken up on many kolkhozes and sovkhoses.

Leading farms in Leningrad, Moscow, Voronezhskaya and Volgogradskaya Oblasts and in Krasnodar and Stavropol' Krays are saving from 10 to 30 thousand tons of fuel a year. An increasing number of kolkhozes and sovkhoses are becoming involved in the activities of the All-Union Public Review of the Efficiency of the Utilization of Raw and Other Materials and Fuel and Energy Resources

and opening personal fuel and lubricant savings accounts. There is a high balance, for example, in the personal account of A. M. Naumov, a machine operator on the sovkhos imeni Chapayev in Noginsk Rayon in Moscow Oblast, who saved 2.710 kilograms of fuel last year on an MTZ-50 tractor.

It has become a rule among the leaders to draw up and implement on a consistent basis each year organizational and technical measures directed toward improving the utilization of equipment and fuel and lubricants. As a rule, standard bulk petroleum storage facilities with fuel distribution pumps have been located on central kolkhoz and sovkhos farms. Crew and section machines are refueled from mobile mechanized fuel tank trucks. Petroleum products are distributed among the machine operators on a basis involving the use of ration quota accounting books and coupons, which insure adherence to a strict procedure with respect to both the consumption of fuel and to timely performance of technical maintenance on machinery.

But there are still, unfortunately, many instances of poor, uneconomical operational management. There are many instances on kolkhozes and sovkhos in Smolenskaya, Tambovskaya, Sverdlovskaya and a number of other oblasts in which excessive amounts of fuel are being consumed as a result of the fact that tractors and motor vehicles are operating with small loads.

An especially great amount of fuel is lost in the course of storage and refueling. Thus, on the kolkhoz imeni Ordzhonikidze in Orlovskaya Oblast's Mtsenskiy Rayon for example, motor vehicle fuel has been stored in a tank in bad condition. A great deal of fuel has been lost as a result. Similar situations have been identified on Kulotinskiy and Prigorodnyy sovkhos in Novgorodskaya Oblast, Kommunar and Malinishchi sovkhos in Ryazanskaya Oblast and Kurkinskiy sovkhos in Tul'skaya Oblast.

Sel'khoztekhnika enterprises, which can and must perform technical maintenance on rural petroleum-product storage facilities and repairs on equipment, have still not had their say.

All rural workers are summoned to work out solutions to the problem of insuring thrifty, economical consumption of fuel.

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ENERGY CONSERVATION

FUEL AND ENERGY CONSUMPTION, CONSERVATION, ACCOUNTING AND CONTROL

'Official' Position

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Editorial Statement]

[Text] The decisions of the November (1978) plenum of the CC CPSU and the speeches of Comrade L.I. Brezhnev speak of the need to intensify in all possible ways the campaign we are waging for economy and thrift. It is no coincidence, Comrade L.I. Brezhnev has declared, that the words "economy" and "economics" are derived from the same root. "Economy" connotes above all an uncompromising attitude toward thoughtlessness in the consumption of our country's wealth--its fuel and energy resources.

Under the leadership of party organizations, kollektivs within the country's industrial enterprises, on its construction sites and on its kolkhozes and sovkhoses are waging a persistent campaign against poor economic management and for the judicious utilization of fuel, electricity and raw and other materials. People's control organs and their activists are also participating actively in this effort. Today we are describing the experience of several committees and groups, how they are assisting their kollektivs search out untapped potential and put an end to inefficient management in the utilization of fuel and energy resources.

Minsk People's Control Inspections

Moscow IZVESTIYA in Russian 28 Mar 79 p 3, People's Control page No 3 (349)

[Article by L. Prot'ko, chairman of the main people's control group of the 11th State Bearing Plant, Minsk: "The Effectiveness of Inspections, Strict Fuel and Electric Power Accounting"]

[Text] In the course of a year personnel of the 11th State Bearing Plant have saved 5,532,000 kilowatt-hours of electricity, 2,540 gigacalories in heat and 137 tons in standard fuel.

The enterprises in Minsk's Zavodskiy Rayon are now producing more goods than all prewar Belorussian industry. A remarkable fact!

People's control personnel, too, are playing an active role in socialist competition for achievement ahead of schedule of targets for the fourth year of the five-year plan. I will mention here the experience of our plant's main control group, which is comprised of 37 people. It operates under the leadership of the party committee and in close contact with the trade union organization and Komsomol'skiy Prozhektor.

Its primary task is to render effective assistance to the plant kollektiv in its campaign for work efficiency and quality. Today this means the conservation of energy resources. What I want to tell about is how this campaign is being waged.

As we know, any disease is easier to prevent than to cure. So it is in our work. Preventive measures are important which would avert the development of one "bottleneck" or another.

We all know how difficult this past winter has been for energy- and fuel-supply system personnel. But it did not take the plant kollektiv unawares. The enterprise made its winter preparations ahead of time. As early as the end of last year, special instruction was given watch personnel in which they were acquainted with forms and methods of monitoring the efficiency of energy resource utilization. Activists then conducted several unannounced inspections, reviews, and checks with a view to closing off drains down which are lost our fuel and energy resources. The main task in this regard lay in identifying the best demonstrated knowledge and performance and in then popularizing it on a widespread basis. They have utilized for this purpose mass-dissemination in-house newsheets, the wall press, display stands and posters.

An effort was made at the same time to identify instances of poor management and waste. An operations staff was set up. In addition to taking steps of a preventive nature, it drew up specific organizational and technical measures directed toward eliminating the deficiencies identified. Upon the presentation of information by the staff, the plant administration has moved to hold offenders liable to disciplinary action and materially responsible for losses and damage.

Very active has been the energy resource conservation section, which is headed by P. Pobedinskiy, a senior engineer and party member. He has monitored maintenance of the operating schedule for power and welding transformers, optimum equipment loads and the efficiency of facility lighting and checked the condition of the cut-off equipment in compressed air, water and steam lines.

Also contributing a great deal in the way of monitoring the efficiency with which energy resources are utilized are the shop-level people's control groups, which are headed by the grinder-polisher A. Gruskiy and the power engineers A. Markevich and V. Kalyuzhnyy.

Komsomol shop organizations are waging an active campaign to conserve electricity. During January and February alone, Komsomol'skiy Prozhektor conducted 10 unannounced inspections, which helped appreciably to improve the situation. It would be worthwhile at this point to mention the following Prozhektor personnel who have distinguished themselves: the electricians I. Kotovich and A. Zamirovskiy and the grinder-polisher L. Pikulina.

We cannot say, however, that the enterprise has done everything to eliminate areas of loss and waste of fuel and electricity. We have not yet been able to draw all workers into this effort. Neither are several specialists playing a sufficiently active role in it. The results of inspections carried out by the people's control personnel do not always become part of the kollektiv's common fund of information. There is also a need for workers and specialists in leadership positions within the plant to appear more frequently at workers' meetings with reports on the progress being made in implementing specific measures directed toward eliminating deficiencies which have been identified and on the measures being taken in situations in which waste and poor management have been discovered.

The kollektiv's efforts have been crowned with some success. During the first three months of this year, 1,065 kilowatt-hours of electricity and 200 gigacalories in heat have been saved. But we believe that this is only the beginning of a great and important effort. By employing on a widespread basis the forms and methods characteristic of them, people's control personnel will be waging in the future an even more persistent campaign for fuel- and energy-resource conservation.

Conservation Efforts in Kursk Enterprises

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Article by IZVESTIYA's S. Troyan, Kursk: "Resources Conserved and Resources Dissipated"]

[Text] The standing commission on monitoring the efficient utilization of fuel and energy resources held one of its routine meetings in Kursk recently. A discussion of some interest took place regarding the manner in which the production sphere and municipal services facilities are being supplied with all types of energy resources.

The oblast has achieved appreciable success in the area of electric power generation. The Kursk nuclear power plant, on which construction is still under way, has already provided approximately 10 billion kilowatt-hours of

electricity to the Unified Power System for the European Part of the USSR. At the end of January still another million-capacity reactor came on line generating current.

It is remarkable that regardless of which aspect of the question the participants in this business meeting touched upon, their attention was focused primarily upon the search for effective means of conservation. Time and again speakers recalled the words Comrade L.I. Brezhnev used in the course of his meeting with voters in Moscow's Bauman electoral district: "...There is nothing more important than a judicious, maximum-possible efficient utilization of all our resources and wealth."

The experience of the rubber industrial products plant is of some interest in this regard. This enterprise was until fairly recently the target of criticism for lack of attention to the conservation of electric energy. The plant kollektiv drew the appropriate conclusions. In the course of three years of the five-year plan it has accumulated on account of its efficient and economical utilization of energy resources savings totaling more than 10 million kilowatt-hours of electricity, approximately 40,000 gigacalories in heat and almost 180,000 cubic meters of natural gas.

This important effort is being continuously monitored by the party organization, a group of representatives and the plant's people's control group. Creative efforts are continuously under way to identify still untapped potential which would allow greater conservation. Competition has been organized under the slogan "Strict Accounting and Control of Reserves." Plant-wide and shop staffs run competition totals and monitor the effectiveness of moral and material incentives.

Close cooperation between scientists and plant personnel has been of tangible benefit. The enterprise has derived large gains from the introduction of equipment developed in the laboratories of the polytechnical institute which makes possible a more efficient utilization of compressed air.

But then right next to the rubber industrial products plant stands the spare tractor parts plant (KZTZ) [Kursk Spare Tractor Parts Plant]. The people there have been in no hurry to take advantage of the conservation know-how and exercise accumulated by its neighbor.

Top enterprise personnel claim that the plant has special commissions on energy conservation, but it has been impossible to uncover any traces of their activities. Some shop chiefs cannot even remember when the last unannounced inspection was held and the conclusions drawn by the commission. The fairly large group of plant representatives is also standing aside from this important matter. Consequently we can't even begin to find out the number of "holes" through which our costly heat is escaping. There are almost 5 kilometers of uninsulated pipe at the KZTZ. Nobody is working on the condensate return. Until recently, there has been an annual overconsumption of more than 400,000 kilowatt-hours of electricity as a result of

a leak in the compressed air system. It is true that, relatively speaking, the situation here was rectified to some extent during February, but energy losses have still not been eliminated entirely. The effective specific norms for electricity and heat consumption per unit of production have remained unchanged at the KZTZ for a number of years, as they have in other enterprises, even though old equipment is being replaced by new.

Kursk Oblast still has available no little potential for greater energy-resource conservation. Kursk Energosbyt personnel conducted more than 500 inspections last year, and they found that over 55 million kilowatt-hours of electricity and 165 gigacalories in heat had been consumed in an inefficient manner. The production of this amount of energy requires 47,000 tons of standard fuel, in other words, 13 trainloads of coal!

Eighty-five enterprises exceeded their plans in the area of electricity consumption. Overconsumption in heat ran to 8 per cent within the meat combine and 10 per cent in the housing construction combine. Things aren't much better within the dairy combine.

Systematic work in the area of updating and improving energy consumption norms is one of the most important methods of conservation. Until now, the question of whether a plant's performance will fall within established electricity and heat consumption norms has lain within a sphere of responsibilities of the chief power engineer. Production engineers, on whom depends the matter of whether or not units and machines are bearing full loads, are remaining on the sidelines in this effort. Such disjointed efforts cannot lead to positive results.

Electricity losses within enterprise systems are excessively great. In order to reduce them we need to increase our production of static capacitors. It's not all that easy to get them these days. But we have nevertheless to find a way out of this situation. It is important to see our goal clearly: to become intelligent, efficient managers. The campaign we are waging to conserve fuel resources is not a short-term effort; it is a law governing all our work. It is important that we not forget this for a single minute.

The instances of poor, insufficient management are especially notable in comparison with the achievements of the leaders. Not so long work colleagues congratulated on his success the young machinist V. Kalinin, who had fulfilled the requirement of one of the main items of his personal obligation for the five-year plan: he had saved 100,000 kilowatt hours in electricity. On this amount of energy conserved he can take approximately 50 trains on "his" 253-kilometer Kursk-Skuratovo run.

A relatively brief period of work experience is not keeping this young innovator from pulling even with his more experienced colleagues A. Burnanov and I. Aspidov, who have added to five-year-plan coffers 118 and 140 thousand kilowatt-hours respectively in electricity saved. These examples provide

clear evidence that each kollektiv and each production worker plays an important role in the campaign for efficient, economic utilization of our resources.

Misappropriations of Electricity Punished

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Article by I. Kapitonov, Kemerovo Oblast: "Severely Punished...and With Good Reason"]

[Text] Several residents of the village of Mozhukh, which is located in Kemerovo Rayon, have demonstrated a bold technical inventiveness when it comes to electrifying...the household. Surpassing them all, though, is M. Orlov, head of the rolling stock section in the rail transport service of the Zhelezobetonstroy trust. He installed a homemade electric boiler in his heating system--a by no means simple piece of equipment--and then "borrowed," that is to say, stole, from the state many hundreds of kilowatt-hours of electricity. This "skilled craftsman" will now have to lay out funds from his own pocket in the form of a fine of 1,555 rubles.

Then I. Kuprin, a blasting foreman in the Novosibirsk quarry administration, has also done himself a lot of "good," albeit in a most simpleminded fashion. When Gosenergonadzor [State Inspectorate of Industrial Power Engineering and Power Engineering Supervision] inspectors would ask him to show them his meter, he would lead them to the small hut in his garden and then each time would say he had "lost" the key. But this attempt at deception nevertheless fell through; he is now having to pay out a 989-ruble fine.

Also to be found in the ranks of our electric power thieves is the crushed-rock plant electrician F. Chelushkin. He electrified a bath house and a garage and even set up equipment for his son, a degree student in a higher educational institution, for copying drawings. That's right, Chelushkin the "inventor" is paying a 351-ruble fine.

But, the reader may ask, the wrongdoing has been uncovered and punished; so why write about it? Unfortunately, we have yet to see the last of the people who thing of hidden wiring and a secret socket in the attic....

Ufa Status Report

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Article by I. Petrov: "The Textile Workers Contribute"]

[Text] The kollektiv of Ufa's textile glass fiber plant has achieved good results in its electricity conservation effort. Playing a great role here in reducing electric power consumption has been the replacement of antiquated,

inefficient equipment which consumed excessive amounts of energy by equipment with high technical specifications. A total of 10 organizational and technical measures have been drawn up and introduced plant-wide which are directed toward reducing the demand for electricity; this has made it possible within a 3-quarter period alone to save more than 2 million kilowatt-hours of electric power.

Actively participating in this effort along with technical and engineering personnel have been specialists from primary production and auxiliary shops and people's control personnel.

Kurgan Status Report

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Article by I. Kostomarov: "How Losses Occur"]

[Text] Kurgan's main Sel'stroykonstruktsiya association plant is utilizing its fuel resources in an inefficient manner. More than 400 tons of fuel have consumed here in excess of the established norms; over 500 running meters of steam line are in operation without insulation, and much steam is escaping uselessly into the atmosphere. The reason behind all this is poor management. Fuel is being stored at the storage facility under inadequate, unsatisfactory conditions; it is spread over an entire area; and it gets rained on, which degrades its quality. Return condensate is contaminated and so is unsuitable for maintaining boiler water level. Approximately 30 tons of condensate are discharged into the sewers every hour.

Heat losses also occur as a result of using steam for heating. Consequently, 480 gigacalories are lost to no purpose in the course of a year.

The conclusion to be drawn from what has been said is that leading personnel at the Kurgan main Sel'stroykonstruktsiya association plant need to rectify this situation.

Dnepropetrovskaya Oblast Status Report

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Article by I. Viktorova: "Pay Stopped To Recover Losses"]

[Text] The Dnepropetrovsk Oblast people's control committee identified serious deficiencies in the area of fuel and energy-resource consumption in several enterprises. City Dairy No. 2 regularly overstates its maximum gas-consumption. Over the course of 11 months of the past year, it overconsumed more than 800,000 cubic meters of gas, for which it paid a fine of more than 17,000 rubles. The Krivoy Rog wool-spinning factory overconsumed to the tune of 800,000 kilowatt-hours of electricity and more

than 2,000 gigacalories in heat. Serious violations in the areas of petroleum-product storage and utilization have been identified at the Dnepropetrovsk, Dneprodzerzhinsk and Nikopol' river ports.

The oblast people's control committee imposed punishments on Comrade Veretennikov, the director of Dnepropetrovsk City Dairy No. 2; Comrade Zaytsev, the director of the Krivoy Rog wool-spinning factory; and Comrades Sharkov, Yeremenko and Funtov, chiefs of the Dnepropetrovsk, Dneprodzerzhinsk and Nikopol' river ports. Deductions have been made from the pay of Comrade Baranov, chief engineer of City Dairy No. 2, for partial recovery of losses caused the state.

Conservation Efforts in Crimean Cannery

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Article by V. Ovsyuk, deputy chairman of the people's control group for the fish-canning branch of the Atlantika association, Crimean Oblast: "Suggestions From a Review"]

[Text] When you work in the same place for a long time, you become accustomed to your surroundings. You need some kind of a jolt to make you take a new look at what you are doing and at the entire situation in which you find yourself and to evaluate them critically. And then you suddenly see that this operation, let us say, can be performed more simply and with fewer labor and material expenditures. That light bulb doesn't have to burn all day; we can get by well enough by turning it on only when we need it.

A public review of potential new ways to be more thrifty and economical in our utilization of material and energy resources provided just such a stimulus for an exacting analysis of production operations within our kollektiv. Suggestions for improvement and greater efficiency began to come in one after the other. Many of them have already been introduced and are producing tangible results.

Thus, for example, the suggestion concerning the improvement of the heating chambers has made it possible to save 24,000 kilowatt-hours in electricity. Then the installation of a recirculation fan for the heater on the Forrostal' line with its 4-kilowatt capacity has helped in the tin-can lacquering process by freeing an additional section with a capacity of 45 kilowatts.

During the course of the review of other ways we can increase the economy and thrift with which we utilize our energy resources a great deal of attention was devoted to the matter of improving the quality of our manufactured output. This has made it possible for us to increase the proportion of our total production bearing the Seal of Quality of 9.1 per cent as compared to the figure called for by the plan.

Yearly Outlook

Moscow IZVESTIYA in Russian 28 Mar 79 p 3

[Statistical summary article: "One Kilowatt-Hour"]

[Text] This year 1,265,000,000,000 kilowatt-hours of electric power will be generated in our country.

A nationwide saving during the year of 1 per cent of this amount would total almost 12 billion kilowatt-hours. This is why we must conserve every kilowatt and use it for the country's work, to derive real benefit.

If we were to reduce the consumption of electricity in our homes by 1 per cent, it would save the country 500 million kilowatt-hours of electricity or 100 trainloads of coal.

With one kilowatt-hour we can:

smelt approximately 1.5 kilograms of steel;

extract more than 30 kilograms of coal;

bake over 36 kilograms of bread.

8963

CSO: 1822

ENERGY CONSERVATION

ENERGY CONSERVATION CONSCIOUSNESS, POLICY, ACHIEVEMENTS DISCUSSED

At Kuybyshevskaya Oblast GES

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

[Article by A. Vakhrashin, turbine shop fitter, GES party bureau member, People's Control Group member; A. Ivanov, holder of the Order of Lenin, electrical fitter; L. Lemyasova, electrician, chairman of the KOMSOMOL'SKIY PROZHEKTOR staff; and D. Churikov, senior foreman, People's Control Group chairman in KOMSOMOL'SKIY PROZHEKTOR column devoted to matters related to current operations: "Save Energy!, Urgent!, A Word to Our Comrades on the Job"]

[Text/ The strictest economy and thrift are inherent features of socialist economic management and important conditions for the further development of the country's economy and improving the well-being of our people.

L. I. Brezhnev.

It has been more than 20 years since the Volga GES imeni V. I. Lenin went into operation. Its generators have now produced 216.4 billion kilowatt-hours of electric power.

A strict regime of economy has already been introduced at the GES. Since the beginning of the five-year plan, the consumption of electric power to meet operating requirements has been cut by 5,866,000 kilowatt-hours. But unfortunately, all of us everywhere are not conserving electricity, and part of the "flow" of the electrical river is being used for no purpose at all. Electric light bulbs blaze away in empty rooms, machines run idle.... The kilowatts "burned up" for nothing run into the hundreds and thousands of rubles. It hurts to see electricity wasted so unthinkingly! Let us all together create an electricity savings fund and declare a campaign against the inefficient use of electric power.

Energy Consumption Statistics

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

[Article: "For the 'Prozhektorist's' Notebook"]

[Text] In 1979 our country will generate 1,265,000,000,000 kilowatt-hours of electric power.

For our overall accounting: A 1-percent saving in the amount of electricity consumed per day would amount nationwide to a saving of almost 12 billion kilowatt-hours.

For your calculations at work: one kilowatt-hour is enough to smelt 1.48 kg of steel, extract 30 kg of coal, bake 36 kg of bread or hatch 30 chicks in an incubator.

For your calculations at home: a city-dweller consumes an average of 302 kilowatt-hours of electric power in the course of a year; if consumption could be cut by 1 percent, it would save the country 500 million kilowatt-hours, or 100 trainloads of coal.

Achievements in Energy Conservation

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

[Article: "To the Credit of the Economy-minded"]

[Text] Tyumen'--Glavtyumenneftegaz enterprises saved more than 11 million kilowatt-hours of electricity last year. Ten thousand young men and women began personal energy savings accounts, while every third young production worker became a member of the All-Union Public Review of the Efficiency of the Utilization of Raw and Other Materials and Fuel and Energy Resources.

Voroshilovgrad--The economic gain resulting from the introduction of the efficiency-improving suggestion of N. Kiznyak and N. Strusovskiy, young innovators of the Voroshilovgrad diesel-engine building production association, has totaled 1407 rubles. They proposed the use of back-up cables to reduce losses of electrical power.

Lipetsk--Vladimir Kuznetsov's Komosomol youth brigade's overall personal energy savings account at the Novolipetsk metallurgical plant now stands at 690,000 rubles. More than 40 million kilowatt-hours of electrical power have been saved by the plant as a whole.

Volzhsk--"To strive for savings and thrift is the responsibility of every Komsomol member!"--this was the item on the agenda for

assemblies held within all Komsomol shop organizations at the Volzhsk Tire Plant imeni 50th Anniversary of the USSR. Young rationalizers here have added to plant coffers with savings of more than 40,000 rubles.

Kursk--Young Komsomol crews at the Kursk station's locomotive depot have saved 700,000 kilowatt-hours of electrical power. This has allowed these young engineers to handle more than 300 additional heavy trains.

In Barnaul

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

/Article by A. Malyshev, furnace operator in the aluminum casting shop of the Altay Engine Plant, Barnaul: "Operation 'Energy,' How We Saved a GES"/

/Text/ Our aluminum casting shop is this plant's greatest energy consumer. The amount of electrical energy it requires would be enough for several kolkhozes. This is no matter to be taken light-heartedly, when you consider that each one of the furnaces in which we smelt the metal is supplied its power from 1300-kilowatt-capacity transformers.

It was thought until recently that it would be difficult for us to be able to save any electricity at all. But the engineers K. Shevtsov, A. Mishagin and V. Berzon then proposed changes in the design of the furnace crucible. The crucible is the container in which the aluminum is smelted. These innovators decided to enlarge its capacity and, at the same time, to reduce furnace idle time. And with this result: while from a single smelting we formerly obtained 2.5 tons of metal, we now obtain all of 2850 and even 2900! But the most important thing is that we have begun to expend much less electricity per unit of casting produced.

The introduction of this technical innovation on the 10 electric furnaces in our shop alone made it possible to save 3,600,000 kilowatt-hours of electricity last year. And then if we add in the economic gain achieved from the introduction of other proposals from rationalizers in our plant, the savings achieved amount to the output generated by an entire GES.

This is all very well, of course, but this statistic led me to consider this: how much stricter a regime of economy could we maintain if all the technical innovations making their appearance in one enterprise or another were introduced without delays everywhere? Let us take only the example of the rationalizing proposal of K. Shevtsov and his colleagues: it has in fact still been introduced nowhere except in our plant.... Even other

related enterprises within our Ministry of Tractor and Agricultural Machine Building are operating on the basis of the old methods. The introduction on a nationwide scale of this one innovation alone promises a great economic gain. What does the ministry think about this?

Komsomol Monitors Ministry Energy Use

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

/Article: "To the Attention of Enterprises of the Ministry of Tractor and Agricultural Machine Building of the USSR!"/

/Text/ We are comparing: new technology introduced in one plant is reducing the consumption of electricity tenfold! But this ministry's enterprises taken as a whole are still overconsuming at a rate 1 percent above the established consumption norm -- 25,095,800 kilowatt-hours per year.

We are asking: what measures is the Ministry of Tractor and Agricultural Machine Building taking to tighten its regime of economy?

We are directing: Komsomol committees and Komsomol'skiy prozhektor /Komsomol Searchlight/ staffs in industry enterprises to conduct Operation "Energy" on 26 January. On that day they are to insure and monitor the strict adherence to the operating conditions and procedures required for all equipment and lighting. Compare the results of the controlled day with those of the preceding day--by how much has it been possible to reduce energy consumption? What should be done, in your view, at each work place and throughout the enterprise as a whole to insure that electric power consumption correspond to the established norms?

Write: 125866, GSP, Moscow, Pravda Street, 24, 6th Floor, KOMSOMOL'SKIY PROZHEKTOR. Indicate "Operation 'Energy'."

Inefficient Karaganda Residential Lighting

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

/Article by L. Mandrusova, engineer: "Who's Going to be Responsible for the Lights?, A Lesson in Arithmetic"/

/Text/ Fact: there is a light bulb for each landing of a multi-story dwelling.

Question: who is going to put out these "burning" rubles?

I occupy myself every month with this simple arithmetic: I multiply kilowatt-hours by 4 kopecks and write out the product in longhand.... Energosbyt can't have anything against me--I am a

thorough, accurate bill payer, and I am complying with its appeal "When you leave, turn out the light!" to the letter. This is in my own apartment. But then I go out onto the landing, and then my power to control the electricity comes to an end. The light bulbs on the landings in our 9-story apartment house burn day and night. Electrical energy is being consumed to no purpose. There are two other multistory dwellings nearby; its the same story there as well. Out of habit I multiplied kilowatt-hours by kopecks again and obtained an astounding figure: about a thousand rubles "burn up" in these three apartment houses in the course of a year. What can we do to save them?

At the 10th residential management administration I got the following answer to my suggestion that we save this thousand: "We can't do anything about it here; no provision was made for light switches on the landings--that's the way they designed the place." Then they soothed themselves with the thought that, as it turns out, a "stairway" kilowatt-hour costs only half as much as an apartment kilowatt-hour. So that not a thousand, but only five hundred rubles "burn up...." But how many light bulbs burn out they couldn't tell me in the residential management administration. They say here that replacing the light bulbs is the responsibility of the apartment house residents. But do you really save on light bulbs if they burn out nearly every day on account of the constant load? And then its not all that easy to buy them either; light bulbs are bought up immediately. I myself don't buy only one or two; I buy them by the dozen.... I still think it would be both simpler and more sensible to install light switches on the landings.

It's impossible to turn out the lights; but neither, as it happens, is it any simple matter to get them turned on. The landings are brightly lit, while downstairs where the mail boxes are there is impenetrable darkness. That's the paradox. It's an annoyance and an inconvenience for the residents, and it makes things difficult for the postmen. We have turned repeatedly to the soviet rayispolkom requesting that the lighting problem in the mail box area be remedied and that the lights on the landings that nobody needs in the daytime be turned out. But, alas, we have yet to receive any assistance.

Komsomol Activity in Volgograd Plant

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

/Article by Ye. Pushkin, deputy secretary of the plant Komsomol committee at the steel wire and cable plant, Volgograd: "By the Light of the 'Flashes,' Action Against Poor Management"/

/Text/ Our KP /Komsomol'skiy prozhektor/ staff recently conducted an unannounced inspection during the night shift. We turned our attention to the problem of the bright lights which were still burning even in those areas where nobody was working--

such, as it turned out, was the design of the shop's electrical power supply system. But this energy is being consumed to no purpose! And one other fact. A heating unit in steel-wire shop No. 4 had been turned over for repairs; it was now having to operate at reduced levels. That was the way things were. But again in this case, electrical energy was being wasted; the heating unit was in operation; but the repair personnel were taking their time. Several days went by.... Our Prozhektoristy spotted this as well.

Measures were taken promptly and urgently in both instances. In the first, a plan was drawn up for redesigning and reworking the lighting system. In the other, a "flash" message flyer was put out declaring a state of emergency. And then they got the work on the heating unit done in one day.

...People sometimes say that Prozhektoristy don't have anything else to do but turn out lights. But as we can see, even this much is still no entirely superfluous activity. Everybody can see that the lights are on in the shop in the daytime and that the machines are running idle; but our Prozhektoristy are the only ones calling attention to these things. Where are the responsible officials involved? They should be called to give an accounting.

Call to Komsomol Prozhektoristy

Moscow KOMSOMOL'SKAYA PRAVDA in Russian 23 Jan 79 p 2

[Text] PROZHEKTORIST!

Wherever you work--in a plant or on a kolkhoz, on a construction site or on a municipal services job or in electric power plants--

CONSIDER YOUR AVAILABLE POTENTIAL

Check:

- actual load compliance of power transformers, electric motors, and so forth;
- timeliness with which equipment is turned on and off;
- lighting system efficiency.

DETERMINE LOSSES

Put out "flash" message flyers; see that required measures are taken; help set things in order.

Send the editors your suggestions, materials from your unannounced inspections, your "Critical Situation Alerts."

SAVE ELECTRICITY!

ENERGY CONSERVATION

MALFEASANCE AT PETROLEUM STORAGE FACILITY BROUGHT TO LIGHT

Minsk SOVETSKAYA BELORUSSIYA in Russian 25 Mar 79 p 2

/Article by I. Seredich, SOVETSKAYA BELORUSSIYA special correspondent: "A Lake...of Fuel, or The Shocking State of Affairs at the Minsk Bulk Petroleum Storage Facility, Losses Covered Over!"/

/Text/ The entire area where the petroleum products arriving by rail are stored was a lake of diesel fuel late that evening. The operator, Anatoliy Lyutynskiy, was awakened after almost 130 tons of fuel had already spilled out onto the ground. Because of his grogginess he did not immediately understand what had happened.

He had everything explained to him the other day in the people's court in Minsk's Oktyabr'skiy Rayon. A. Lyutynskiy is now having to pay fully for his negligent, irresponsible attitude toward his job responsibilities. It was a bitter lesson also brought home to the management of Glavneftesnabsbyt BSSR's /Main Administration for the Transportation, Supply and Marketing of Petroleum and Petroleum Products of the Belorussian SSR/ central storage facility.

One would have thought that after this incident the situation would be rectified in a strict, exacting manner and that an end would be put to negligence and wastefulness in the handling of fuels and lubricants. But alas, this has still not come to pass. Just as before there is crying mismanagement and enormous losses of scarce, expensive fuel.

...February's freezing temperatures are now upon us. But gasoline is not water, which freezes at 0°. As a result of the lack of air-tight seals at the flanged connecting points on the distribution standpipes, it drips out onto the ground despite the low temperature. And from two of the standpipes it doesn't simply drip out; it runs out in a solid stream. Even if these losses add up to only 7 kilograms a day, it's no difficult matter to figure out that in the course of a year they will run to more than 5 tons.

...The storage facility's Zaslavskiy branch. Tank No. 12 is being filled from railroad tank car No. 7615583. Nobody is keeping any eye on this operation. The tank has been filled to overflowing, and a flow of gasoline is gushing up out of it and running over the edge.

"What d'ya know! It looks like we lost about a hundred liters."-- a remark tossed out in some disdain by a facility worker who had come running up.

What was there for him to become disturbed about if there was so much fuel that he would say, as they do, "Take it away, I don't need it."? But that isn't the case here.... If we are to believe the suppliers, what happens here is that when they empty the fuel out of the railroad tank cars, they don't drain these cars fully. Here is a report compiled by the Novoyaroslavskiy tankage point. It says that negligence on the part of Minsk bulk petroleum storage facility personnel has resulted in their failure to empty a total of 29.5 tons of diesel fuel from a railroad tank car running to a total of 1,947 rubles. Nobody sounded the alarm at the storage facility when it received the Novoyaroslavskiy report. Only when the oblast people's control committee found out about it did storage facility management personnel begin to find excuses for themselves: somebody must have filled that tank during its return run, they said....

Not long ago, L. Bekritskiy, a Khar'kov tractor-engine plant representative, looked in on operations at Minsk's main Glavneftesnabsbyt bulk petroleum storage facility and wrung his hands: so this, as it turned out, was who was causing their engines to malfunction! It was by no coincidence that he came to this conclusion. In many instances, fuel shipped to kolkhozes and sovkhoses fails to meet the requirements of standard specifications. But can it really be pure (and so of the proper quality) if it is stored in tanks which haven't been cleaned for eight or nine years? For example, tank No. 33, which has a capacity of more than 2,118 cubic meters, was last cleaned and dirt and other residue removed in 1971. Tanks No. 14, 15 and 16 have not been gone over since 1970. We can imagine how much dirt and other sediment there is in them.

We understand that different engines require different fuels. Winter fuel has to be used in the winter and summer fuel in the summer. In accordance with these requirements, the oil industry produces its various fuel types with their varying content of sulfur and other substances. But personnel at the Minsk main facility and its branches are frequently failing to keep this in mind. Thus, for example, on 10 and 22 January Type 3 diesel fuel was transferred from rail tank cars to tanks designated for summer fuel. But such things as mixing high-grade fuel with low-grade fuel also quite frequently occur.

"This is what is making the engines develop malfunctions so especially frequently," Khar'kov's L. Bekritskiy pointed out.

The day L. Bekritskiy, the representative of the Khar'kov tractor engine plant, A. Dovyдовskiy, deputy section chief of Goskomsel'-khoztekhnika BSSR's quality control laboratory and M. Shelest, senior engineer of the Minsk oblispolkom's agricultural administration visited the petroleum storage facility, workers released diesel fuel as low-sulfur, when in actual fact, as revealed by a check test, it was high-sulfur fuel. This deliberate regrading allows the storage facility to cover up its poor management practices. These criminal activities on the part of storage facility personnel then turn up for kolkhozes, sovkhoses and other fuel consumers in the form of the premature breakdown of costly equipment which is also so necessary.

Does Glavneftesnabsbyt BSSR's main bulk petroleum storage facility have an organization monitoring the storage and quality of fuel and lubricants? Of course it does. The operations of an entire laboratory are devoted to this. It is headed by A. Goshko. But rather than maintaining adherence to required procedures, its personnel display an above-average ability when it comes to "strengthening" the financial position of their enterprise. It is with their knowledge and approval that accounting personnel adjust transport overhead costs and illegally transfer low-grade fuel over to high-grade.

We have to add at this point that A. Goshko is not the only one at this facility who is known as a real wizard. Chief Engineer I. Kudel'ko and B. Nezhvitskiy, foreman of the product-transport section are in no way inferior to her in this respect. With a wave of "magic" wands, the specific gravity of gasoline becomes identical at different temperatures. Isn't this the secret behind the fact that no matter how much fuel or lubricant spills out onto the ground, no matter how much is lost in other cases, the facility's accounting section is still successful in making ends meet?

The kolkhoz and sovkhos managers are the ones who can't make their ends meet. It is as a result of the irresponsibility on the part of personnel of Glavneftesnabsbyt BSSR's Minsk bulk petroleum storage facility that motor vehicle and tractor engines are continually breaking down and that serious harm is being done to our agriculture.

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CSO: 1822

ENERGY CONSERVATION

ESTONIAN SSR PEOPLE'S CONTROL PERSONNEL IN CONSERVATION CAMPAIGN

Moscow IZVESTIYA in Russian 15 May 79 p 3

/Article by P. Neyerot, deputy chairman of the Estonian SSR People's Control Committee: "Tangible Results, Suggested by Practical Experience, People's Control Organs in the Estonian SSR Strive to Achieve Economy in the Use of Fuel and Energy Resources"/

/Text/ The November (1978) plenum of the CC CPSU emphasized that a duty of party, soviet and economic organs lies in doing everything possible to eliminate nonproductive expenditures and losses and to insure the economical use of metal, fuel, electricity and all material, financial and labor resources. It is important that, as one of the main principles of socialist economic management, a regime of economy be instituted on a consistent basis in every industry, within every production kollektiv and at every work place.

The people's control organs of the Estonian SSR and their activists are working continuously to assist worker kollektivs search out their as yet untapped potential and devoting a great deal of attention to the consumption of fuel and energy resources, which are an important source feeding the production of additional manufactures and raising still higher our people's standard of living.

Some time ago a mass-scale review was conducted in Estonia of the efficiency with which fuel and energy resources were being utilized. Thirty thousand people participated. Of the six thousand suggestions workers submitted, half have already been introduced into production operations. This has made it possible to save 4 million kilowatt-hours of electricity, 20 thousand gigacalories of thermal energy, 9 thousand tons of fuel and hundreds of tons of gasoline and diesel fuel. No small number of drains down which energy resources were being lost have been closed off, and many negligent managers and supervisors have been punished for tolerating waste and poor management.

It should be said that the forms and methods of control which were quickly and effectively worked out in the course of the review, have now been adopted. They have been implemented and are being improved. We are now carefully checking the timeliness with which enterprises, organizations and farms receive their energy resource savings and consumption norm reduction targets and the status of departmental supervision of the process of developing and implementing necessary organizational and technical measures. One of these inspections established that enterprises within the jurisdiction of the Ministry of the Meat and Dairy Industry of the Estonian SSR were running their heating in an inefficient, uneconomical manner and were failing to meet their heat savings targets. This ministry was only poorly monitoring the process of establishing and implementing technically well-founded norms. The committee directed the attention of ministry leadership personnel toward these deficiencies and called to account a section head, a chief mechanic, who was the one directly responsible for this task. As a result, things began to improve.

We have also checked on the consumption of petroleum products by kolkhozes and sovkhozes and in enterprises and organizations of Estsel'khoztekhnika /Sel'khoztekhnika of Estonia/. It turned out that repairs and technical maintenance of equipment and metering devices was not being performed in a proper manner and that measures had not always been taken to reduce the consumption and loss of fuels and lubricants.

Follow-up inspections showed that much has changed for the better. Refueling stations have been equipped with fuel- and oil-dispensing pumps. Widely used now for equipment and machinery refueling are mobile gasoline refueling points, which provide mechanized refueling of agricultural equipment.

An object of the republic committee's special concern is monitoring the operations involved in insuring the reliable and stable functioning of the energy production system. This is, of course, understandable. For almost all of the electric power required for the operation of the republic's economy is now generated by two thermal power stations--the Estonian and the Baltic GRES. Operating on shale, a local fuel, these stations are generating more than 18 billion kilowatt-hours of electricity per year, of which two-thirds is transmitted to other parts of the country. Therefore, together with the Estonglavenergo's /Estonian Main Power Supply Administration/ technical commission, we are checking up on these stations' preparedness for fall-winter operations and on how measures are being implemented for the reduction of fuel and energy consumption.

The people's control groups within the Estonglavenergo system are rendering substantial assistance in this effort. They are vigilantly following the operations involved in modernizing equipment, the quality of repair work and the effort to improve the power transmission system. The specific consumption of fuel by power plants has been reduced over a two-year period by 3.7 grams per kilowatt-hour. This has made it possible to save 50 thousand tons of standard fuel and free the approximately 1,000 railroad cars required to deliver it.

It is worthwhile for us to take note of the energy resource conservation work being done by the people's control committee of Tallin's Nerskoy Rayon. It made the timely discovery of cases of wasteful consumption of thermal energy at three enterprises. The committee studied the matter and then provided clear, direct recommendations for eliminating the deficiencies which had been identified. Enterprise leaders have given assurances that they will rectify these situations. But even after these promises had been made there was no change in the state of affairs, and losses of thermal energy were continuing. The rayon committee had to step in once again. On this occasion it did not limit itself to giving recommendations and expressing its wishes. Several enterprise supervisors were severely punished for poor management and delays. This had the desired effect. Thermal energy losses have been reduced by 4.6 per cent.

An examination of material assembled in connection with these inspections makes it possible for us to identify negative tendencies in the operations of enterprises, farms, ministries and departments with respect to the utilization of fuel and energy resources. Some managers, for example, annually overstate their energy resource consumption norms; so it therefore becomes no difficult matter to achieve what appear to them to be real energy savings. Not always justifiably, enterprises work out norms for volume of operations expressed in gross monetary terms and fail to undertake the more laborious process of establishing norms for actual production output, norms which correspond more closely to reality. For it is no secret that the energy intensity of production is not equivalent to its value. This is to be seen especially clearly in the cases of enterprises with frequently changing products lists. The committee has had to close off these loopholes as involving a consumption of energy for "non-norm-authorized" purposes. All energy consumption has now been brought into line with norm requirements.

It has proved to be a by no means simple matter to achieve this in agriculture. The committee has repeatedly pointed out to the republic Ministry of Agriculture the necessity of establishing and introducing norms governing energy resource consumption. But, by referring to one specific condition or another, individual ministry personnel attempted in every way possible to prove

that it would be impossible to apply them in this area. But after employing every means of bringing influence to bear, it was finally possible to achieve this. Norms are now in effect within the republic for the cultivation per unit of agricultural land and covering the production of different types of crops. They differ in accordance with the specific conditions prevailing from one region to another.

The people's control organs of the Estonian SSR and their activists are monitoring and will in the future monitor, continuously and strictly, the consumption of fuel and energy, not only within individual plants, but also within each shop and section and at each work place, considering as they do this task to be one of enormous national importance.

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C30: 1822

ENERGY CONSERVATION

ATTITUDES, POLICY ON ENERGY CONSUMPTION, CONSERVATION DISCUSSED

Natural Gas Conservation in Kirgiziya

Frunze SOVETSKAYA KIRGIZIYA in Russian 16 May 79 p 2

[Article by Yu. Nikulin, inspector for Gosgaznadzor USSR's Kirgiz territorial inspectorate: "Potential Lies Untapped All Around, Economy and the Economy"]

[Text] The republic's enterprises burn hundreds of millions of cubic meters of natural gas each year. Much of it is consumed to meet production requirements. Since we cannot see or feel the "blue" fuel, some managers probably don't worry much if any of it escapes or is wasted.

Practical experience demonstrates convincingly that a fuel's "work" produces a greater yield where proper energy-resource accounting procedures are followed and there is encouragement for creative initiative on the part of innovators. Every year, for example, the Frunze TETs draws up detailed gas conservation plans. These plans are then implemented. Last year this made it possible to reduce consumption of the "blue" fuel by 528 thousand cubic meters. The Tokmak glass works saved 350 thousand. Twice as much could have been saved here had the burning process been controlled automatically.

The benefits to be derived from employing automatic equipment in the heat-generating process are indisputable. But matters in a number of enterprises have yet to get past the talking stage. Of course, automatic equipment does require some trouble and effort to set up and adjust, as well as careful operational maintenance. Not wanting to burden themselves with unnecessary worries, some managers prefer to continue operations as before, controlling the gas ignition process manually. As a result, it does not burn completely, and much of it escapes into the atmosphere. This condition exists at the Dzhahalal-Abad brewery and tobacco and fermentation plant, confectionery factory, bakery and structural component combine. No small amount of fuel is

lost in the Osh construction materials combine. Gas losses from inoperative automatic equipment in enterprises of the food and construction materials industries run to more than a million cubic meters annually.

The installation of economizers is an indispensable requirement for the normal operation any boiler facility. They don't require great expenditures, while the savings they allow are appreciable. In spite of repeated instructions issued by the Gosgaznadzor inspectorate, however, the structural components combine in Dzhalal-Abad and the Sel'khozremont association's main plant have still not installed these units.

As inspections reveal, operation charts are missing from many boiler facilities. But this is really a basic paper, one which is used to determine the proper operation of the boiler. Without his operating chart, an operator will not be able to select the optimum burning conditions. A great deal of fuel is consequently either consumed unnecessarily or escapes uselessly into the atmosphere.

Operation and adjustment checks on furnaces and boilers are not always properly performed. As much as 5 per cent of the burnable fuel is lost as a result. Approximately one and one-half million cubic meters of gas are being lost for this reason within organizations of the Ministries of Motor Vehicles and Highway Transportation, the Food Industry and of the Construction Materials Industry alone.

Every enterprise has at its disposal untapped potential which would enable it to increase the efficiency with which it utilizes its natural gas resources. But it frequently occurs that, rather than looking for ways to save fuel, managers strive by all possible means to "pry loose" addition funds. We must move decisively to put an end to this practice.

In Kirgiz Ministry of Local Industry

Frunze SOVETSKAYA KIRGIZIYA in Russian 16 May 79 p 2

/Article by S. Alaydarov, chief of the technical section of the Ministry of Local Industry of the Kirgiz SSR: "Proper Attitudes Lacking in Support of Enterprise Economy Drive Within Republic Minnestprom"/

/Text/ The year 1978 saw a great overconsumption of diesel fuel within enterprises of the republic Ministry of Local Industry. At the same time, 3 million cubic meters of gas remained unused.

There has been no improvement in the situation so far this year either. Overconsumption in the first quarter ran to more than 400 gigacalories in heat and 373 thousand kilowatt-hours of electricity.

What steps is the ministry taking to rectify the situation with respect to the consumption of fuel and energy resources?

The ministry collegium held a meeting at the beginning of the year. It analyzed the results of the past year's operations and approved organizational and technical measures for the current year. It was pointed out that the industry as a whole had achieved a certain saving in fuel and energy resources. At the same time it leveled criticism at those responsible for poor management and negligence in the utilization of fuel and energy. Penalties were imposed on some enterprise directors.

The plan for organizational and technical measures for 1979 calls for antiquated boilers to be replaced with more productive and economical ones. It also calls for stricter discipline in technical operations, a reduction in the time equipment is allowed to run idle and the process of installing control devices. As indicated by calculations, this will help save in the course of the year 97 tons of standard fuel, 3519 gigacalories of heat, and 164,000 kilowatt-hours of electricity. Ministry plans have been disseminated to all enterprise managers. They in their turn have drawn up their own conservation measures. The job now is to carry them out.

Editorial Comment

Frunze SOVETSKAYA KIRGIZIYA in Russian 16 May 79 p 2

[Editorial comment on preceding Alaydarov article/

[Text/ In the view of the technical section chief, the situation with respect to the consumption of fuel and energy resources within the republic's Minmestprom (Ministry of Local Industry) enterprises is no cause for alarm. But this is not the case. The ministry has yet to provide an explanation for the fact that in 1978 enterprises were allocated funds in excessively large amounts for gas. Neither does it know which enterprises overconsumed diesel fuel and by how much. With this kind of ignorance of the situation you can't organize an effective drive to improve and tighten a regime of economy.

Let's take a close look at this plan with its organizational and technical measures providing for judicious, efficient consumption of energy resources. It contains several points. They are

as follows: "Efficient Fuel Consumption," "Improving Heat Insulation on Pipes," "Utilizing Condensate" and "Increasing the Power Factor." Where, by whom, when? There is no answer to these questions here. What use, one may ask, is to be made of a plan like this?

At the beginning of the year the Minister of Local Industry, M. Konurbayev, directed the technical section to "organize a mass-scale inspection of enterprises concerned with the matter of the conservation of all types of fuel and energy resources." Four months have gone by, but not a single inspection has been performed. But who is in charge of the work of the technical section? The directive states that "the technical section is to be responsible for supervising implementation." Any further comment here would be, as they say, superfluous.

The ministry collegium has rightly pointed out that fuel and energy consumption records are frequently late in arriving from the localities; they are often incorrectly compiled and sometimes they aren't sent in at all. But even now much has yet to change. Just as before, these records don't provide a full and clear picture of the situation. We still don't know the manner in which enterprises are implementing even those skimpy measures which have been planned. Within the ministry there is a single person, one with a multitude of other responsibilities, who deals with all matters related to monitoring the consumption of fuel and energy resources. The conservation campaign is thus being waged in an essentially formal manner, from case to case, situation to situation.

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ENERGY CONSERVATION

BRIEFS

KARAGANDA COAL--This is not an easy goal, and it is the more desirable to reach it. The first to report about early fulfillment of the six-month plan were the miners of the Severnaya Mine. Since the start of the year they have mined almost 550,000 tons of fuel. The success did not come by chance. Miners of the Severnaya are distinguished by high labor and technological discipline, by an excellently organized socialist competition. Close to the six-month goal are the Molodezhnaya, Mikhaylovskaya, imeni Kostenko, and imeni Gorbachev mines. [Text] [Moscow IZVESTIYA in Russian 10 Jun 79 p 1] 10908

NUREK PRODUCTION--Nurek, Tadzhik SSR. Lit up on the control panel of the Nurek GES was the figure of 20 billion. This is how many kilowatt-hours of electric power have been produced at the station since its start-up. The high rates of production are the result of early introduction of each of the eight operating assemblies. With full completion of construction of the plant in November it will produce almost 12 billion kilowatt-hours of energy per year. [Text] [Moscow IZVESTIYA in Russian 10 Jun 79 p 1] 10908

TYUMEN' OIL DRILLING--In the fourth year of the five-year plan the drillers of Glavtyumen'neftegaz should build 7 million 470 thousand meters of oil wells. The present leaders in the labor competition are the collectives of the first Nizhnevartovsk and second Surgut drilling administrations. Working hand in hand with the Siberian masters of high-speed cutting are the drillers and tower assemblers from Bashkiria, Tataria, the Ukraine, and Belorussia, using the watch method. They are brought to the work site by air transport, and after completing the watch they are returned to the place of permanent residence until the next shift several days later. [Text] [Moscow IZVESTIYA in Russian 26 Apr 79 p 1] 10908

NEW GAS WELL--Bulla Island, Azerbaijan SSR. About a million cubic meters of gas and 300 tons of condensate are given off daily by the new well drilled here. The drillers completed the cutting of the well six months ahead of the deadline, and saved about a million rubles. This is the first time here that output has been obtained from such a depth--5,800 meters. [Text] [Moscow PRAVDA in Russian 5 Jun 79 p 1] 10908

GAS LINE STRENGTH TESTING--Tyumen'. New construction equipment has passed a strength test in the North. The proving ground where it was tested was the almost 400-kilometer section of the Urengoy-Chelyabinsk-Petrovsk-Novopskov gas line. Previously serving as the source of the gas river was the Vyngapurovskoye deposit. The new shoulder of the gas line switches in to it the famous Urengoy as well. This will allow the Tyumen' power

engineering complex to increase considerably the delivery of blue fuel to the country's industrial enterprises. Operating for the first time in these latitudes for the welding of the line section was a special automatic unit, the Sever, developed by the Institute of Electrowelding imeni Ye.O. Paton. [Text] [Moscow IZVESTIYA in Russian 1 Jun 79 p 2] 10908

ELECTRIC LINE IN KARAKUMS--Mary. The first supports for a 500 kilovolt electric power line have been installed in the Karakums. The LEP [electric power transmission line] will join the Mary GRES with the Uzbek city of Karakul' and will help to raise the operating stability of the unified energy ring of Central Asia. This is the first time such a high-voltage trunk line has been built in Turkmenistan. The builders of the mechanized columns of the Spetsset'stroy Trust are laying the line under unusually complex conditions. Now the operations are being conducted in almost impassable areas of the desert. Already completed is one of the important stages of the operations: over 600 foundations have been laid for the metal supports between the oblast centers of Mary and Chardzhou. The total length of the electric transmission line under construction will be 375 kilometers. [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 7 Jun 79 p 4] 10908

EASTERN CHELEKEN GAS WELL--An industrial flow of condensate and gas has been obtained from test well No. 3 at the Eastern Cheleken site. This well was drilled by one of the best brigades of the Kotur-Tepinskiy drilling administration under the leadership of V.V. Chub. When cutting it first one gas layer was revealed, and then at a depth of 3,500 meters detected in the lower reddish deposits was the next productive bed, from which the gusher was also produced. In the near future the high-yield well of the new deposit will be transferred to the Lininneft' NGDU [Oil and Gas Extracting Administration]. Exploration of the promising structure is continuing. The location and depth of its shaft have been determined taking into account the new data about the structure of geological rocks in this region. [Text] [Ashkhabad TURKMENSKAYA ISKRA in Russian 5 Jun 79 p 1] 10908

CSO: 1822

BAKU OIL RESERVE DEPLETED

Seoul THE KOREA TIMES in English 12 Jun 79 p 4

[Text]

BAKU, Soviet Azerbaijan (Reuter) — A forest of derricks stretching as far as the eye can see, a slight whiff of petroleum in the air — Baku has all the things an oilman needs to make him feel at home.

Centuries ago its natural naphtha flares gave it the name "the town of fires" and made Baku a center of Zoroastrian fire-worship.

In the early 1900s the city produced half the world's crude output, and the Bodeker guide suggested a jaunt round the oilfields, "which the traveller is recommended to do in his oldest clothes and boots on account of the pools of oil."

Today the capital of Soviet Azerbaijan is twinned with the oil city of Houston, Tex., though its role as the main center of Soviet oil extraction lies in the past.

Last year Baku oilmen produced just 16 million tons of oil, out of a total Soviet output of 572 million. After 100 years of operation during which around one billion tons have been extracted from the sandy peninsula on which the city stands, the local reserves are becoming harder to exploit.

Two-thirds of Azerbaijan's oil and three-quarters of its natural gas now come from offshore drilling operations in the Caspian Sea.

Feredoun Musayev is the head of the state-owned Serebrovsky offshore complex, which juts out into the sea on a causeway half an hour's drive from Baku.

Musayev, like a connoisseur of fine wines, holds up small glass bottles to show visitors the different kinds of petroleum his enterprise produces.

Last year the Serebrovsky complex, one of five oil and gas production installations working in the Caspian, produced 1.35 million tons of oil and five billion cubic meters of gas.

The Serebrovsky drilling rigs are linked to each other and to the shore by a spidery network of iron causeways and piers that thread their way across the green Caspian.

"We are taking rigorous measures to keep the Caspian clean," Musayev declares. But "sometimes our equipment is not perfect," he adds.

Soviet drilling rigs now operate at a maximum depth of 70 meters of water, but most of the oil is extracted in areas which are much shallower.

In 1976 at the beginning of the current Soviet five-year plan, Azerbaijan was given a 1980 production target of 22.16 million tons of oil, but this now looks far out of reach.

The republic's Deputy Prime Minister Alish Lemberansky told foreign journalists that ne-

gotiations were still in progress on a plan for foreign firms to build a factory that would produce deep-water drilling rigs.

"The contract has not yet been signed, but we hope it will be soon," he said. He added that some time in the 1980s oil production would start to rise again and reach the peak level of the 1940s, between 22 and 23 million tons a year.

For the time being, the level of production is disappointing, and the target for Azerbaijan's oil production in the first three months of this year was not met.

The republic's Communist Party chief Geldar Aliyev criticized the oil industry in January for its high level of breakdowns, mismanagement and waste.

According to Lemberansky, Baku's oil is important to the Soviet economy because of its lightness and low sulphur content.

At the Lenin Oil Refinery just outside Baku, one of the biggest such plants in the Soviet Union, director Feredoun Zainalov and his 2,000 workers process 10 million tons of oil a year.

But because production in Azerbaijan is lagging, half of the oil comes from as far away as western Siberia.

Despite the fact that long-term prospects for the oil industry in Azerbaijan are not so bright, the refinery is being expanded.

More important for the future of Baku is the fact that it is well established as a production center for oilfield equipment and a center for training petroleum engineers and other specialists.

The Azerbaijanis say they are now exporting not just oil but skilled technicians to every other drilling site in the Soviet Union.

CSO: 1812

FUELS AND RELATED EQUIPMENT

FAST REACTOR FOR BELOYARSKAYA AES

Beloyarskaya AES Construction Problems

Moscow IZVESTIYA in Russian 10 Jun 79 p 2

/Article by V. Malyshev, director of the Beloyarskaya Nuclear Electric Power Station (Sverdlovskaya Oblast): "A Workers' Relay Race for the Nuclear Giant"/

/Text/ Atomic power engineering is being developed rapidly in our country. Approximately one-fifth of the new capacities of electric power stations, which should be put into operation during this five-year plan, fall to nuclear electric power stations. This is governed by the need to save power resources, especially in the European part of the country.

In the decisions of the 25th CPSU Congress it is noted: "To provide for the anticipatory development of atomic power engineering in the European part of the USSR. To speed up the construction and placement into operation of fast reactors...." The special attention which was devoted to the construction of fast reactors is explained by the fact that at the same time as generating electric power they make it possible to reproduce nuclear fuel. They consume one type of nuclear fuel while operating, but in so doing produce another one in an even greater amount. Therefore such plants are sometimes called breeder reactors, which in the 1990's will play a conspicuous role in atomic power engineering.

As is known, the first fast reactor nuclear electric power station in the world was built in the Soviet Union. In the building of fast reactors our country also occupies one of the leading positions. The BN-350 reactor in the city of Shevchenko--one of the largest in the world--has already been operating for a long time. The BN-600, the largest fast reactor in the world, with an electric capacity of 600,000 kW is now being built in the Urals at the Beloyarskaya Nuclear Electric Power Station.

The fast reactor is an extremely complex facility, in the designing, construction and complete equipment of which tens of organizations of various ministries are taking part.

The important construction project is profiting by the great attention of party and soviet organs. The headquarters set up by the Sverdlovskaya Oblast Committee of the CPSU has a political and organizational influence on the progress of construction. While supporting the valuable initiative of the 28 scientific and production collectives of Leningrad, which have taken under their patronage the Sayano-Shushenskaya GES, the community of the Central Urals has stepped up the concrete assistance to our construction project.

The sense of great patriotism and responsibility to society gave birth to the movement under the motto "A Workers' Guarantee to the BN-600!" The initiators of the competition at the construction site of the new power block adopted the experience of the "workers' relay race." They are raising considerable internal reserves and are attempting to see to it that the fast reactor is started up by 22 December.

A joint agreement on creative cooperation has been reached between the planning and design organizations, the equipment manufacturing plants, the builders, the installers, the adjusters and the operators. The agreement calls for the delivery of equipment on the target dates and the high-quality performance of operations at all the stages up to the assimilation of the rated capacity of the reactor.

In April of this year a representative conference with the participation of responsible officials of party organs and executives of ministries was held, at which the questions of deliveries of missing equipment were examined. After the conference specific steps were taken and rigid schedules of deliveries of equipment were drawn up.

The bulk of the most difficult construction operations on the main building have been completed. The installation of the reaction is being completed, and the start-up and adjustment work on it is already beginning. The situation is worse at the so-called auxiliary projects, such as the building of the water treatment plants, the shore pumping station, the compressor house, the diesel generating plant and others. This year construction and installation work worth a total of 20 million rubles has to be performed. The builders should in practice complete the work during the third quarter. But of the planned work worth 4.8 million rubles they have performed so far only 2 million rubles of it, and the third quarter is already not far off. Of the planned 2 million rubles the heat insulation workers have assimilated only 600,000 rubles. Tsentroenergomontazh should perform work worth 6.4 million rubles, but so far has done work worth only 1.9 million rubles. The installation of the machinery of the overload of the reactor control is being delayed. The lag of the wiring work on the reactor is cause for particular concern. The delivery of equipment is approximately one month behind the outlined plan. The Podol'sk Machine Building Plant imeni Ordzhonikidze, the Leningrad Elektropul't Plant and the Kirovskabel' Plant are not fulfilling their obligations.

The situation can be corrected and the reactor can be started up on time, but for this effective steps must be taken promptly. Above all it is necessary to increase the collective of builders, installers and adjusters by 350-400 people. It is necessary for the ministries delaying the delivery of planned equipment to treat their obligations with all seriousness. This pertains to the ministries of power machine building, the electric equipment industry, communications and instrument making, automation equipment and control systems.

The Beloyarsk reactor is to become the foundation of our fast-neutron atomic power engineering. Everything must be done so that it is built on time.

From the editorial board. The important question of ensuring the timely placement into operation of the largest fast reactor in the world is raised in the article. IZVESTIYA is taking control of the progress of the fulfillment of the socialist obligations by the collectives of those enterprises which are supplying equipment for this reactor. We are confident that all those who are involved in the building of the new plant will actively join in the patriotic movement "A Workers' Guarantee to the BN-600" and will ensure the fulfillment of the responsible assignment by the Day of the Power Worker--22 December 1979--by their dedicated labor.

Officials Comment

Moscow IZVESTIYA in Russian 15 Jun 79 p 2

[Article: "Why Not According to the Schedule?"]

[Text] "A Workers' Relay Race for the Nuclear Giant"--the article of V. Malyshev, director of the Beloyarskaya Nuclear Electric Power Station, with this title was published in IZVESTIYA (No 134, 1979). The question of ensuring the timely placement into operation at the Beloyarskaya AES of the largest fast reactor in the world was raised in it.

On 11 June the Collegium of the USSR Ministry of Power and Electrification discussed this article.

USSR Minister of Power and Electrification N. Neporozhnyi reports to the editorial board:

We are already taking and in the near future will step up the measures which are aimed at starting up the BN-600 fast reactor by the Day of the Power Worker--22 December 1979. But our hands are being greatly tied by the enterprises which are delaying the delivery of equipment, and above all the Podol'sk Machine Building Plant imeni Ordzhonikidze of the Ministry of

Power Machine Building. I mention it first because it is worse than the others. It is a first-rate enterprise. But facts are facts. But it has not coped with the fulfillment of the work according to the schedule which was agreed upon by the two ministries, but after all the plant is building, one could say, the heart of the new reactor.

IZVESTIYA correspondent K. Smirnov directed to the executives of the Ministry of Power Machine Building and the Podol'sk Machine Building Plant imeni Ordzhonikidze the questions:

Why is the schedule of deliveries not being observed?

What is being undertaken to correct the situation?

When will the plant really ship all the equipment for the BN-600 reactor?

USSR Minister of Power Machine Building V. Krotov:

The delays in meeting the schedule have been caused by the exceptional complexity and responsibility of the scientific, technical and production problems which the plant collective together with scientists had to solve. But, of course, the enterprise could have coped with the honorable assignment without delays, if the reserves which are available to this collective, which is strong in its potential, had been discovered in time.

Now the stage of assimilation has been completed. The plant has set a good pace. The workers, technicians, engineers and managers of the enterprise will do everything in order to reduce the lag behind the schedule to a minimum and to ship in full the equipment for the BN-600 reactor in the first half of July.

A. Chernov, director of the Podol'sk Machine Building Plant imeni Ordzhonikidze:

This order has become a serious test for the plant. Although our enterprise does have experience in producing complicated, unique power equipment, here the demands on quality were raised to a new level. In the course of the work the collective had to solve a large number of difficult questions of a research nature. We ourselves, on our own initiative, increased the number of check-out operations. We introduced equipment which makes it possible to make a 100-percent X-ray check. Incidentally, the delay occurred here precisely in the check-out operations and the elimination of defects.

As to the manufacturing method, there were no serious miscalculations here. Moreover, whereas according to the manufacturing method 51 days were allowed for the production of one module from the start of assembly to complete readiness, initially we made it in 56 days, then shortened the period to 42-43 days, and on the last models we will shorten this period to 27-30 days. In so doing the labor intensity of the work on the modules has been decreased by 44 percent of the initial labor intensity. A new, higher

quality and more reliable welding technology has been developed at the plant, for the old technology, which was incorporated in the technical specifications, produced many defects.

Much has been done. However, it was done with a delay. We began working on the order for the Beloyarskaya AES properly and all out only in 1978.

Were there opportunities not to upset the latest schedule? There were. Having devoted great efforts to the complexities of production and monitoring, we passed over questions of the organization of labor, interorganizational and intershop cooperation.

Now, when many reserves have been put into operation, the lag has been cut almost in half. Shift-day assignments have been drawn up in the shops filling the order of the Beloyarskaya AES, sliding schedules are in effect. Strict monitoring of the fulfillment of the assignments by each shift has been organized. Specialized brigades have been created, each of which deals with one type of operations. A number of operations coincide in time. Production managers have been attached to the most critical sections. The brigades have been reinforced by workers of the highest skills. The competition launched on the initiative of the Sverdlovskaya Oblast Committee of the CPSU among the related industries participating in the construction of the BN-600 power block at the Beloyarskaya AES has become the most important accelerator of the work. The results of the competition are tallied regularly in the shops.

The other day the plant party committee discussed the question of mobilizing the collective for the unconditional meeting of the delivery schedule for the Beloyarskaya AES. The discussion concerned principles. A number of production managers were reprimanded for upsetting the schedule. Specific steps, which make it possible to give the guarantee: the last products for the Beloyarskaya AES will be shipped by us before 15 July, were outlined.

V. Malyshev, director of the Beloyarskaya Nuclear Electric Power Station, comments on the responses:

Executives and specialists of the Beloyarskaya AES have constantly been at the Podol'sk Machine Building Plant imeni Ordzhonikidze and have an excellent idea of the difficulties with which the enterprise has been faced in filling our order. Incidentally, in spite of the delay in the delivery of equipment, our business relations with this plant, unlike with others, have been established on the basis of mutual respect and mutual assistance.

Of course, the Podol'sk machine builders have greatly let us down today as well. On 11 June 50 modules were shipped instead of 62, and the plant collective will have to work in earnest to complete the delivery of the 72 modules by 15 July. It should be kept in mind that considerable difficulties for installation arise with each change of the delivery date. It is necessary to postpone some jobs to the last stages. And this means an increase

of the number of installation personnel and the violation of the technological sequence of the installation and the start-up and adjustment operations.

Unfortunately, the Plant imeni Ordzhonikidze is also delaying the delivery of the secondary "sodium-to-sodium" heat exchanger, which is especially worrying us. For its installation is on a critical line, we have been awaiting its delivery since 1 June. And if the plant does not guarantee the delivery of the heat exchanger in the immediate future and the completion of the deliveries of the modules of the steam generator by 15 July, it will not long be possible at the site to make up for the lost time.

From the editorial board: Today the executives of the Podol'sk Machine Building Plant themselves admit that all the technical difficulties and all the unresolved questions of production and the organization of labor have been left behind. The decisive days have arrived. Now everything depends on the plant collective, on its dedicated labor, on the extent to which each worker, each engineer and technician understands the importance of his own personal contribution to the birth of the new atomic giant. "The Soviet individual," the CPSU decree "On the Further Improvement of Ideological, Political and Educational Work" appeals to each of us, "should clearly realize the social importance of his own personal participation in the fulfillment of the national economic plans and in the acceleration of scientific and technical progress as the decisive condition for the further consolidation of the might of the homeland and the triumph of communism."

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CSO: 1822

FUELS AND RELATED EQUIPMENT

ZHDANOVSKAYA-KAPITAL'NAYA COAL MINE

Moscow IZVESTIYA in Russian 6 Jun 79 p 1

[Article by N. Lisovenko (Donetsk): "For the Needs of Power Engineering"]

[Text] The field from which the new mine will remove coal has a reserve of 124.2 million tons of anthracite.

If you look from afar at the complex of the Zhdanovskaya-kapital'skaya mine, which is under construction, it seems like an enormous steamship moving stubbornly over the waves. This similarity to a two-funneled sea-going giant is emphasized by the two tower pile drivers, one of which has risen to a height of more than 100 m.

"This mine will be a true embellishment of the Donbass," says V. Petrovich, secretary of the Shakhtersk Gorkom. "Figuratively speaking, it is an enterprise of the third generation of the domestic coal industry."

Indeed, there were small mines here with a daily output of up to 500 tons. As far back as 20 years ago enterprises were built, which were designed for obtaining 1,500-2,000 tons of anthracite a day. But today such giants as the Dolzhenskaya-kapital'naya, the Zhdanovskaya-kapital'naya, the Nagol'-chanskaya 1-2 and the Shakhterskaya-glubokaya are appearing today, which after the assimilation of the rated capacities will yield more than 8,000 tons of anthracite a day, that is, will do the work of 8-10 average anthracite mines of the Donbass.

After the completion of the second section the Zhdanovskaya-kapital'naya will yield 12,000 tons of anthracite a day. In the drifts hydraulic piles and graders will be operated, all the production processes will be mechanized and automated. And there is another important detail: the mine will not pollute the environment, it is proposed to leave the bulk of the rock under the ground, while the shaft water will be purified in two settling ponds.

We set out with S. Lunev, chief of the general contracting shaft building administration, and N. Metashop, director of the mine being built, to look

at the mine yard and the other mining drifts which are already ready. The cage quickly carries us to a depth of 400 m. The high vaults are faced with concrete. The tracks with the small cars standing on them do not create the impression of crowding, the drifts are in excellent condition, the rooms of the underground electric power substation create the impression of a clean apartment.

"We have been able to do a lot, because Dongiproorgshakhtostroy provided the Donbass workers with a new technology of organizing the construction, which has not been used yet anywhere in the world and owing to which we no longer build temporary structures and, using advanced equipment, we immediately build a permanent headframe, an electric power station and other facilities which are located on the surface."

The innovations proposed by Dongiproorgshakhtostroy, the timely issuing of the planning documents by the general contractor, Dongiproshakhta, as well as the observance of the instructional unit-by-unit and network schedule drawn up by the general contractor, the Artemshakhtostroy Trust--all this enabled the builders to record in their obligations for the 10th Five-Year Plan: "The Zhdanovskaya-kapital'naya mine, the normal construction period of which is 92 months, will be put into operation earlier, that is, in 1980."

The mine builders are keeping their word. Unfortunately, the work with the building of the dining room, as well as housing for the miners, who already next year will be coming here to mine coal, is lagging. Of the planned 125,000 m² of living space only one-fifth is ready. Of course, the Donetsk-zhilstroy Combine is an organization which is greatly overloaded with orders, but this circumstance cannot serve as an excuse.

...Specialists have already calculated that the miners will mine the reserves here for more than 63 years. The coal will go for power needs, and above all for the mighty GRES which is being built nearby in the same Shakhterskiy Rayon.

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FUELS AND RELATED EQUIPMENT

PIPE PRODUCTION FOR TYUMEN'

Moscow NEFTYANIK in Russian No 5, May 79 p 22

[Article: "The Metallurgists Respond"]

[Text] In July of last year a multiple-skill brigade of the Central Committee of the Metallurgical Industry Workers Union and the Central Committee of the Petroleum and Gas Industry Workers Union, which was made up of representatives of the two central committees and specialists of scientific research institutes, studied the work of the trade union committees of the Azerbaydzhan Pipe Rolling Plant imeni V. I. Lenin, the Nizhnedneprovskiy Pipe Rolling Plant imeni K. Liebknecht, the Rustavi and Taganrog metallurgical plants on improving the quality of the pipe of the petroleum assortment, which is produced by these enterprises. As a result of the study the multiple-skill brigade drew up recommendations on the improvement of the quality of pipe and its storage. The editorial board of the magazine requested the management of the plants to tell about what is being done at the plants in this direction. Today we are offer for the readers' attention the report of V. Shevchenko, chief of the laboratory for the organization of product quality control, and M. Karpenko, editor of PRIDNEPROVSKIY METALLURG, a newspaper with a large circulation of the Nizhnedneprovskiy Pipe Rolling Plant imeni K. Liebknecht.

The party committee, the plant trade union committee and the administration have set up special control over the filling of the orders for the oil workers of Tyumen'. For many years the collectives of pipe shops Nos 1 and 4 of the plant have been delivering casing to Tyumen'. A large set of measures have been implemented in shop No 1 to increase the quality of casing. Particular attention has been devoted to the sleeve section of the shop: 2K 272 threading machines have been put into operation, the mechanized removal of shavings has been introduced.

In pipe shop No 4 the modernization of the finishing section has been carried out, the shop has been furnished with new pipe-threading equipment. Two modern mechanized flow lines for the production of sleeves for casing have been put into operation, a new technology for producing pipe 219 mm in diameter with the reduction of the walls on a sizing machine to a thickness of 10 mm has been assimilated, the highly productive groove designing of the rollers of pilger mills for thin-walled pipe 219 mm in diameter has also been assimilated.

Taking into account the importance of the timely and high-quality filling of the orders for Tyumen', a public action group has been set up at the plant for monitoring the progress of the filling of these orders and the quality of the deliveries of threaded casing and pump and compressor pipe. Production Division Chief A. M. Donatov heads the group.

The group is made up of specialists of the technical division, the central plant laboratory and the division of the scientific organization of labor and representatives of public organizations. The work of the group is organized according to a plan and is monitored by the plant trade union committee.

Socialist competition, in the tallying of the results of which quality is the main indicator, is playing an important role in increasing product quality. The results are tallied daily and are revealed on special stands in the shops and sections. According to the work results during the first quarter of this year, among the brigades and shifts first place in the competition was held by the brigade of the pilger mill of pipe shop No 1, which is headed by foreman G. I. Filonenko, and the shift of rolling of pipe shop No 4, which is headed by foreman Ye. A. Filyachenko.

The plant collective of metallurgists, by improving the forms of organizing work and introducing a comprehensive system of product quality control, henceforth will meet in due time the orders of the oil workers of Tyumen' and ensure the high quality of the pipe.

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FUELS AND RELATED EQUIPMENT

DEEP DRILLING FOR PETROLEUM

Moscow IZVESTIYA in Russian 2 Jun 79 p 2

[Article by L. Levitskiy (Tomsk): "The Horizons of the 'Second Story'"]

[Text] Petroleum and Western Siberia. These words are already inseparable. We all admire and are proud of the feat of the geologists. But few know that today they are prospecting only in the upper formations: to depths of 2-3.5 km or, as prospectors say, in the "first story." But is there petroleum, is there a reserve for new discoveries deeper, at a depth of 3, 4 and 5 km? Geological scientists and production workers are now almost unanimous: yes, there is.

The mysteries of the first well on the Urman site are remembered to this day. They drilled it deeper than usual--to the Paleozoic limestones. What was it, the "second story," like there, were the ancient formations concealing stores of fuel? The raised rock samples--polished cylinders of light rose marble of primordial freshness and strength--did not leave great hopes. The logging tape--a kind of cardiogram of the depths--completely dispelled them. It recorded clearly: dry.... But they had not had time to lower an instrument--the bed tester--when the well reacted violently to the interference. Only the experience of the drillers helped to avoid an emergency--an uncontrollable blowout.

Not long before this event Novosibirsk geologists also obtained petroleum from such limestones. Both deposits are located in the so-called Nyurol'skiy Depression. The voice of distant ages resounded imposingly, in two gushers. It rang out very opportunely, at the very height of the fervor concerning the prospects of the study of ancient formations.

What, it would seem, is there to argue about? Back in the 1930's Academician I. Gubkin argued that commercial petroleum in Western Siberia existed in both young, Mesozoic formations and ancient, deeper Paleozoic formations. From an ordinary, everyday point of view the difference between young, Mesozoic rock (it is 180-230 million years old) and ancient, Paleozoic rock,

which is twice as old, is lost in the distance of the ages. But in the geological history of Western Siberia they are not simply ages which superseded each other.

The Paleozoic times were turbulent. Earthquakes and eruptions of volcanoes broke open the depths and spread lava over everything around. The Mesozoic brought tranquility. It covered over the scarred earth securely with a solid covering of loose rock. Two very different levels of mineral resources were formed. The first is the sedimentary Mesozoic covering and below it is the complex capricious Paleozoic, which is full of mysteries.

The geologists who began in the 1950's the extensive prospecting for petroleum and gas were confronted with all of this. At that time the conclusion of some quite prominent scientists on the hopelessness of exploring the shattered "second story" rang almost categorically: if there were formations of petroleum there, they said, they disappeared long ago, it is more sensible to focus efforts on the deposits of the "first story."

But not without reason do the oil workers joke: the best professor is the bit. The Tomsk and Novosibirsk geologists took an interest in the interface of the "first and second stories." Their interest was quickly materialized in deposits which ostensibly should not have existed. This made it necessary to recall the predictions of I. Gubkin about the wealth of the depths. More and more evidence was accumulated of the fact that nature had dispersed petroleum both in the upper and in the lower formations. Precisely this is now the conviction of the specialists of the Institute of Geology and Geophysics of the Siberian Department of the USSR Academy of Sciences. Headed by Academician A. Trofimuk, they have repeatedly stated their arguments both in scientific articles and in recommendations for planning organs.

In principle the sectorial institutes also share the opinion of the Siberian scientists. They determine the capacities and the structure of the limestones, it is true, in different ways--hence the discrepancy in the estimate of the reserves. As Lenin Prize Winner N. Rostovtsev accurately noted, small punctures into the body of the substructure by exploratory wells are inadequate for the study of the mineral resources of the "Western Siberian Platform," the time for a broad advance on the Paleozoic has come.

The All-Union Applied Science Conference specified the strategy and tactics of this advance. It was held in Tomsk, in direct response to the gushers of the Nyuroi'skiy Depression. USSR and RSFSR Gosplans, the union and republic ministries of geology and the Siberian Department of the USSR Academy of Sciences acted as the organizers. Therefore the conference recommendations to a certain extent were also of an obligatory nature. The exploration of the Paleozoic formations became for the Tomsk and Novosibirsk geologists the main task of the 10th Five-Year Plan.

How is it being resolved? The Tomsk administration is coping with the plan on the increase of reserves, but what has been done in three years is only

40 percent of the five-year program. Last year the "second story" should have provided 80 percent of all the increases of petroleum reserves. Considerably less was obtained.

A strange situation is arising: only a part of the potential reserves of the Tomsk land have been realized; no one doubts that petroleum is there, only it is difficult to find it. The new deep formations so far are not providing the necessary output. How do you approach them and discover their structures and capacity?

Quite recently a special commission on reserves did not accept the petroleum of the new deposit from the Novosibirsk geologists. It was easier for them to discover the store than to study it over five years. The quality of the research of the Tomsk geologists is no higher.

Three years of work according to three comprehensive goal programs did not bring great changes. During the 11th Five-Year Plan the amount of drilling in Tomskaya Oblast will double. Therefore it is necessary to find the keys to other, more cleverly hidden deep stores. At one time science correctly determined the direction and methods of prospecting in the upper sedimentary rock. Geophysics "aimed" accurately like a sniper according to the coordinates which it gave, all the new known deposits were discovered. With the increase of the depths geophysics no longer ensures the necessary accuracy, and the geologists are driving the expensive wells in general approximately.

Comrade L. I. Brezhnev noted that a new, more complicated phase of the development of Western Siberia has come. The amount of all operations has to be increased two- to threefold. The novelty and vagueness of the geological decisions have been added to the difficulties of overcoming the natural conditions, to the difficulties of growth among the prospectors. The Tomsk and Novosibirsk geologists were the first to be faced with them and as yet have not found sufficient support of science.

Of course, it is impossible to turn the conversation on the role of science in this matter to one collective, be it even a leading collective. More than 10 institutes are involved to one extent or another in the work on revealing the mysteries of the depths. But unfortunately, it is precisely that they are involved in, and are not conducting with the proper scope the research by large collectives. The activeness of the scientific debates is not being turned into the activeness of business. The comprehensive programs, which were approved at the highest level in the sector, have had almost not effect on the activity of the institutes.

The sources of the nonobligatoriness lie, perhaps, in the position of the workers of the RSFSR Ministry of Geology. They cannot bring themselves to exercise authority with respect to the sectorial institutes, since their own failure would be immediately revealed. I saw at the Tomsk administration deficit sheets--lists of everything that is lacking for the fulfillment of the annual plans. And the strange thing is that the lists were signed by the leading specialists of the ministry. Another thing is even

stranger—from year to year the shortages have been increasing. With what are you going to reach the depths and obtain such necessary information?

The lag of geophysics is especially worrisome. The Tomsk Geological Trust now has only two digital seismic prospecting stations—for 14 crews. And in other respects its technical equipment is beneath all criticism. Machinery and equipment, which have been series produced for more than a year, are wanting. The shortage of material resources is forcing the collectives of the expeditions to sacrifice all the prospects for the sake of today's meters and tons of increase of the reserves. In 1978 the Tomsk administration fulfilled 86 percent of the drilling program and only 38 percent for deep wells. Their drilling is approximately two years behind the programs.

The Paleozoic has stepped from scientific discussions into the national economic plans. In the wake of prospectors the field workers have already drilled the first well to the limestones, a petroleum pipeline is being laid to the group of deposits of the Nyuroi'skiy Depression. Not counting, apparently, on the efficiency of the prospectors, the Ministry of the Petroleum Industry is asking for these regions to be turned over to it and is ready to do the prospecting itself. The republic Ministry of Geology has not agreed to this proposal, although it is not hastening itself to launch the work....

Thus, let us draw some conclusions. They consist, as is evident, in the fact that the limitation of the scientific and technical support of the prospectors and the inability to organize reliably the implementation of major comprehensive plans were revealed. This cannot but create anxiety.

The main power base of the country needs the augmentation of the reserves of raw materials. Let me again refer to Academician I. Gubkin, who appealed not to lock in on one direction and to conduct extensive prospecting, and nothing should prevent this.

For the present the geologists are going ahead timidly.

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FUELS AND RELATED EQUIPMENT

URBAN DEVELOPMENT IN TYUMENSKAYA OBLAST

Moscow IZVESTIYA in Russian 10 Jun 79 p 3

[Article by A. Otradnov, chief of the division for construction and architectural affairs of the Tyumenskaya Oblast Ispolkom: "The Taiga Avenues"]

[Text] In this area--in the taiga backwoods, on the endless expanses of the polar region--very recently even hunters' paths were rare. Now you would surprise hardly anyone with the broad avenues of the cities which have appeared in the taiga and tundra.

When determining the program of fundamental transformations in the northern part of Tyumenskaya Oblast, where new stores of petroleum, gas and condensate were discovered, our party at the very start set the task--along with the industrial development of this wealth to render the area habitable according to a plan, to build new cities and settlements and to provide the people with all the conveniences for living.

Since 1965, when the intensive advance to the north began, the population of our oblast has increased by more than 100,000. Since that time 12 million m² of housing have been built--nearly two-fold more than the available housing of the cities and workers' settlements, which we had in 1965. Schools for 200,000 pupils, children's preschool institutions for 73,000 children and hospitals with 8,500 beds have been put into operation. Palaces of culture and palaces of technology, modern consumer service and trade complexes and sports structures have appeared.

Who does not now know Surgut, Nizhnevartovsk, Nefteyugansk and Nadym? But these northern cities are very young. However, the population of Surgut and Nizhnevartovsk already exceeds 100,000. Here modern residential neighborhoods stretch out, broad avenues and streets, spacious squares and public gardens have been laid out. With each year the taiga avenues are becoming better organized and more beautiful. Nefteyugansk and Nadym are growing rapidly. At the Arctic Circle another city is being founded, which is destined to become the capital of the gas workers--Novyy Urengoy. You cannot compare with anything what has been done in the shortest time in the Tyumen' north! The concern for the people of this front line also largely

determined the economic efficiency of developing the wealth of the region, which has become the main base of the country for the production of petroleum and gas.

The second phase of the comprehensive development of the mineral resources and the development of the productive forces, which Western Siberia has entered, is characterized by the intensification of the social transformations and the decrease of the arisen disproportions in industrial and civil construction. It must be said that these disproportions even now are still very great, and now they are becoming a hindrance to the development of the populated areas of the Tyumen' north. The problems of housing, kindergartens and nurseries, institutions of culture and health, trade and service enterprises are still pressing. Life itself dictates the need to expedite the solution of these sociocultural problems. They are closely connected with economic progress. The soviets of the region are taking steps so that the program of major social transformations in the region, which was outlined by the party, would be successfully implemented.

What are our new cities like today, what is their appearance, how is the wealth of potentials of the industrial method of construction and modern architecture being realized? Unfortunately, neither Surgut, Nadym nor Nizhnevartovsk can yet boast of "an uncommon expression." There are many reasons for this. Here, in my opinion, are the main ones.

The first groups of "landing forces," who landed, in essence, on a bare spot, were forced to worry first of all about a roof over their heads, about heat, about the minimum conditions for living and difficult labor in the uninhabited area. Housing was brought here by rail and water from various cities of the country. But this housing was standardized and identical in appearance. The second reason for the similarity of the northern cities is governed by the limited possibilities of the house-building enterprises which were created in Tyumen' and Surgut. They were oriented toward the production of the simplest uniform housing, although with all the amenities. The demands for apartments grew more rapidly than the plant capacities, and this dictated above all the speeding up of the conveyer, and not its updating.

Meanwhile many scientific research and planning institutes of the country joined in the designing of housing and social, cultural and general projects and in the drafting of the general plans of development of the new northern cities. Leningraders drafted special plans of apartment houses for the north. These apartment houses have a greater height of a story, an improved layout of the apartments, greater areas of the utility rooms and built-in drying lockers. All this ensures comfort. Thousands of residents of Nadym, Nizhnevartovsk and Surgut already live in such apartment houses.

The planning institutes of other cities did much in this direction. On the whole the general plans have been successfully implemented. But the point is that the growth rate of production was considerably higher than anticipated. The adjustment of the general plans with the prospect of the

development of Surgut to 260,000-300,000, Nizhnevartovsk to 200,000, Nefteyugansk to 100,000 and Nadym to 50,000 is now being completed. But so far few apartment houses with more stories are being built, the projects of the citywide centers so far remain on paper....

In the book "Tselina" [Virgin Soil] CC CPSU General Secretary and Chairman of the Presidium of the USSR Supreme Soviet Comrade L. I. Brezhnev writes: "Civil improvements are the establishment of benefits for the people and concern about them. This always is not only economic work, but above all policy, errors in which are expensive."

But we--the architects, the builders, the executives of the local soviets--in our practical work at times forget the deep meaning of the term "civil improvements." Its main essence apparently is that, after getting an apartment in a new apartment house, a person might enjoy all the amenities. In reality this happens far from always.

The "arrhythmia" of the construction and placement of housing into operation, which it has not yet been possible to overcome in the northern cities, is leading to rush work at the end of the year and a decrease of the quality of construction and installation work. The situation is being aggravated also by the fact that the items being supplied by house-building enterprises frequently do not meet the requirements of the All-Union State Standard. For example, the house-building combines of the Sibzhilstroy Association so far have not ensured the output of completely usable structures and parts. Obvious defective products often arrive at the construction sites. That is why alterations, deviations from the plan and violations of construction norms and regulations are habitual at the projects of this association in Surgut, Nefteyugansk and Nadym.

Frequently the apartment houses are accepted hastily, with flaws in workmanship and defects, with temporary heat and water supply and sewage systems. But the builders reluctantly eliminate the flaws in workmanship and the defects. Therefore the establishment of benefits for the people goes on for years. This gives rise to just reproaches.

In the oblast decisive steps are now being taken to increase sharply the quality of the work of all the links of the house-building conveyor. In Nizhnevartovsk, for example, the gorispolkom along with the Main Administration for Petroleum and Gas for the Tyumen' Region, Glavtyumenpromstroy and SibNIIEP [Siberian Zonal Scientific Research Institute of Standard and Experimental Planning] has made a decision on introducing the "Orel continuity." The sole performers have been specified: the client is the Nizhnevartovskneftegaz Association, the planner is SibNIIEP, the contractor is the Nizhnevartovskstroy Association. The threads of this cooperation come together at the coordinating center attached to the gorispolkom. In other northern cities this advanced method is still being introduced slowly.

The modernization of the operating house-building enterprises and the construction of new ones are being carried out. They are called upon not only

to expedite construction, but also to increase its quality and to place into production new items for the series of apartment houses and socio-cultural and everyday projects. The construction of the house-building combines in Nizhnevartovsk and Nadym is being completed, the modernization of the one in Surgut has begun. All this will make it possible in the immediate future to improve the building up of cities, to create a structure which is diverse in the number of stories and the layout and to increase the architectural expressiveness of buildings and blocks and the level of comfort of the housing.

The time has come to deal closely with the formation of the urban centers. The resolution of this problem had been postponed. But without this it is impossible to achieve the architectural completeness of a city. Moreover, such a practice leads to the dispersion of projects of citywide importance and hampers the provision of city dwellers with the necessary types of social, cultural, municipal and everyday services.

In a city, as in a person, everything should be fine. Can this be achieved if the industrial enterprises at the discretion of the departments arise in the most unexpected places? When the development of the petroleum-bearing Ob' River region and the gas-bearing Arctic region began and everyone tried to find a suitable site to disembark, this could still be understood. At that time there was no time for pondering. But the times have changed, yet the psychology of some economic managers remains unchanged. The building up of industrial regions and zones is often carried out unsystematically, just so that it would be more convenient and less expensive for the department.

The random development of tracts of land, a large number of small auxiliary enterprises, which are not recorded in the general plan and are not based on standardized construction elements—that is what has so far been typical of the northern cities. There is something here for the soviets of people's deputies to think about. For the local soviet is the boss on its own territory. By way of self-criticism it should be said that the ispolkom of the oblast soviet has also not yet exercised its authority, all its rights and powers in the area of construction. Now boiler houses are rising in the middle of the future avenues, bases and warehouses of various types are rising in the middle of the planned squares. The lack of a general planner for industrial zones is promoting this. But there should be one.

The northerners, who are providing the country with the main increases in the production of petroleum and gas, have the right to expect that the cities in which they live will be beautiful and properly provided with amenities. It must not be forgotten: the party has entrusted us not only with the development of the mineral resources of the Tyumen' north, but also with making its territory habitable and providing it with amenities.

FUELS AND RELATED EQUIPMENT

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PLANS FOR 1979 PEAT MINING

Moscow TORFYANAYA PROMYSHLENNOST' in Russian No 5, May 79 pp 2-3

[Article: "Successfully Carry Out Season of Peat Mining"]

[Text] The 1979 peat season, the season of the fourth year of the five-year plan, has started.

The collectives of the peat enterprises of all the peat mining union republics have done a lot for the successful operation of the new season. The enterprises of Rostorf have prepared over 6,500 ha of new and 87,700 ha of active fields, and repaired about 18,000 units of production equipment. The enterprises of the Belorussian SSR Ministry of the Fuel Industry and Ukrtof of the Ukrainian SSR Ministry of the Metallurgical Industry have come to the season with good results.

The preparation for the carrying out of this season was preceded by significant events that entered a brilliant page in the political and economic life of the country.

At the Plenum of the CPSU Central Committee that took place in November 1978 the tasks of the further improvement in the effectiveness of economy, and the early fulfillment of the five-year assignments were set for all branches of the national economy.

The Soviet Union met the elections to the USSR Supreme Soviet with accelerated labor and famous accomplishments. The unity of the inviolable block of communists and non-party people was again demonstrated at the elections.

In the country there is a broadening mass movement under the motto: "An accelerated finish for the five-year plan of efficiency and quality."

The implementation of measures for the early fulfillment of the five-year plan requires mobilization of all workers for the fulfillment and overfulfillment of the planned assignments, a thrifty attitude towards the use of material and labor resources, and a strict pattern of saving and search for internal resources.

In his speech at the meeting of electors of the Baymanskij electoral district of Moscow, the general secretary of the CPSU Central Committee, Chairman of the Presidium of the USSR Supreme Soviet L. I. Brezhnev stated: "In a word, comrades, now there is no matter more important than the thrifty, maximum efficient use of all our potentialities and resources."

For the workers of the peat industry this is first of all the efficient use of the weather conditions, each fine day and hour.

Now, having started a new peat season, the leaders of the enterprises, sections, the foremen and working collectives must once again deeply analyze the results of last season, and take into consideration the permitted errors that will make it possible to avoid their repetition and to mobilize the production collectives for the unconditional fulfillment of the intensified planning assignments.

The industrial enterprises of our country are faced with mining over 88 million tons of peat, including 58.8 for the RSFSR, 13.7 for the Belorussian SSR, and 8.4 million tons for the Ukrainian SSR, and to a certain measure eliminating the lags permitted in the first years of the five-year plan.

It goes without saying that the meteorological conditions have a negative effect on the operation of the peat industry. Already in the beginning of this year a great flood occurred in Belorussia and in the Ukraine, there was a prolonged spring in a number of rayons of the RSFSR, and so forth.

However the meteorological conditions have the most unfavorable effect on the enterprises that are poorly prepared for the season. Systematic lags in the repair and preparation of operational areas at the enterprises of the Lentsrf association again resulted in a disorganized beginning of the peat season. A delay in the repair of equipment at the enterprises of the Pskovtorf association did not permit all the equipment to be put into operation.

The insufficient supply of pipes for the bridge-passages and spare parts supplied in the first place by the plants of the all-union production association Soyuzseliormash was the reason for the delay in putting new areas into operation in the association Tyumen'torf, as well as the reason for the standstill in the production equipment at the height of the season at the enterprises of the associations Kalinintorf and Kirtorf.

At the same time, due to the good preparation for the season and the measures taken against floods and other elemental phenomena the enterprises of the system of the Belorussian Ministry of the Fuel Industry, the Administration of the Peat Industry of the Latvian SSR, the peat enterprises of the association Shaturtorf, Orekhovotorf and others were able to begin the peat mining ahead of schedule.

A guarantee of the successful operation of the season is a high degree of organization, discipline, unflinching observance of the norms and regulations of technical operation, meticulous work with the personnel, detection and

spread of the leading initiatives mobilizing the collectives of the enterprises to overfulfillment of the planned assignments, and the use by all workers of the leading experience.

The leading experience that is repeated many times in the work of its followers is an important and truly inexhaustible reserve for acceleration of rates and improvement in the quality indices of work.

The peat workers widely support the initiative of the collectives of the association Orehovskorf and the Ocheretskii Order of the October Revolution Peat Enterprise to work under the motto "No one lagging alongside" and the appeal of the leading workers of Bostorf A. D. Ierkin, P. A. Markulov, V. I. Nikitin, Ye. D. Kochalkin and D. M. Kolesnikov for early fulfillment of the five-year plan.

The initiative of the machine operator of the Solivanovskii peat enterprise Ya. N. Gorbunov to increase the coefficient of utilization of working time for the production equipment deserves to be spread.

The best use of the weather conditions at the peat enterprises will be promoted by the spread of the movement used in the association Staturorf "personal account for efficiency--to each worker", in the association Beulovskorf--the method of working according to brigade contract, and at the peat enterprises of the Belorussian BSH--the method of the Moscow Dinamo plants; the extensive use of summed accounting for working time in the period of intensive peat mining.

The success of the season depends a lot on the rapid solution to questions of equipment operation, the timely delivery of workers to the production sections, organization of feeding, working conditions and rest for the workers at the field bases, and observance of the work safety requirements.

An important task for the collectives of the peat enterprises is the fulfillment of the fire prevention measures to preserve the finished product. This task must be solved from the first days of the peat season. Especial attention should be given to measures for saving the fuel and energy resources, organizing and applying methods for economic stimulation for saving fuel and lubricants.

The peat season is an examination for the branch. It is our duty to our country, the honored task of the workers, foremen, and engineering and technical personnel of the enterprises and associations of the peat industry to successfully pass this examination, not only having fulfilled but also overfulfilled the plan for peat mining, as well as the additional assignments of the government.

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FUELS AND RELATED EQUIPMENT

SPECIFICATIONS OF NATURAL GAS CONDENSATION PLANT

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 5, May 79 p 28

[Article: "Plant of Natural Gas Condensation to Cover Peak Loads of Gas Consumption"]

[Text] The plant is designed to regulate the gas supply in a period of drastic cooling and in emergency situations at the gas pipelines.

The condensation plant includes:

- block of drying and purifying gas;
- block of condensation;
- isothermic storage of condensed gas;
- block of fractionation (to obtain the cooling agent);
- block of regasification;
- auxiliary equipment.

The technological plan of the condensation block is based on the use of a refrigerator cycle on a mixed cooling agent with preliminary propane cooling.

The technological plan of the plant makes it possible to use the series-produced compressor equipment manufactured in the USSR.

Main Indices of Unit

Output of condensed natural gas, T/h	20
Output of block of regasification, million m ³ /day	11
Installed capacity of compressors, kw	9,600
Geometric volume of low-temperature storages, m ³	180,000
Economic efficiency, million R/year	7

Developer of the technological plan for the condensation plant--All-Union Scientific Research Institute of Natural Gas.

For information write to: 142700, Vidnoye, Moskovskaya oblast, GSP VNIIGaz.

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FUTURE OF GAS CHEMICAL COMPLEXES

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 5, May 79 pp 29-31

[Article by A. I. Gritsenko, director of the All-Union Scientific Research Institute of Natural Gas: "Problems and Outlook for the Development of Gas Chemistry"]

[Text] "Introduce new and efficient methods and systems for developing the deposits of mineral resources, advanced production processes for their mining, enrichment and processing, bearing in mind an increase in the degree of extraction of mineral resources from the earth, a guarantee of a more complete and comprehensive processing of the mineral raw material..." (from the "Main Directions for the development of the USSR National Economy for 1976-1980").

The gas industry is developing at high rates, therefore problems associated with the complex processing and use of raw materials extracted from the earth are acquiring especial importance.

Currently practically all the mined gas is used as fuel at the power plants, steam power plants, and for domestic and technological needs. However, the gas of a considerable number of deposits contains such valuable components as ethane, propane, butane, sulfur, helium, and condensate whose processing at the gas chemical complexes makes it possible to produce valuable products for the chemical industry.

By the beginning of this year the country had mined 3 trillion m^3 of natural gas, including about 2 trillion m^3 with an industrial content of ethane; at the same time 100 million T of ethane, 400 million T of propane, and 20 million T of butanes were not used as chemical raw materials.

Taking into account the growing demands of the chemical industry for hydrocarbon raw material, the institutes VNIIGaz [All-Union Scientific Research Institute of Natural Gas] and Gipropolimer carried out the technical and economic substantiation for the creation of gas chemical complexes (GCC) and the raw material hydrocarbon base for them based on ethane, propane, and

butanes taken from natural gas. In 1978 these same institutes with the involvement of the All-Union Scientific Research Institute of Hydrocarbon Raw Material developed a variant of the General Plan for the Comprehensive Use of Natural Gas, Condensate and Oil Gases.

Currently our country has over 800 gas and gas-condensate fields with tested supplies of gas of 28.6 trillion m^3 , of which about 10 trillion m^3 have an ethane content over 3%. Such an ethane content is the condition for processing together with the concomitant propane and butanes at the gas chemical complexes. In the future the supplies of ethane-containing gases will supposedly increase considerably.

The main volumes of tested and predicted supplies of ethane-containing gases are concentrated in the Orenburskaya oblast, Timano-Pechorskiy region, Tyumenskaya oblast, East Siberia, Central Asia and the Ukrainian SSR, which can also may be the main regions for the creation of large gas chemical complexes, where, according to preliminary calculations, millions of tons of ethylene, and hundreds of thousands of tons propylene annually may be obtained.

In the future it is possible to create new gas chemical complexes with total volume of the processing over 100 billion m^3 per year in the Kazakh SSR, Azerbaydzhan SSR, Yakutskaya ASSR, Krasnoyarskiy kray, and Tyumenskaya, Tomskaya, Irkutskaya, Saratovskaya and Volgogradskaya oblasts.

It is also planned to increase the processing of gas at the extant gas chemical complexes.

The construction of large gas chemical complexes with processing volume of 22-25 billion m^3 per year will be compensated for in 4-5 years and will guarantee a considerable profit.

The processing of natural gas at the GOC will permit tens of millions of tons of gasoline to be freed for the national economy.

In addition to the supplies of natural gas in our country there are resources of gas condensate from which one can obtain a sufficient quantity of olefin, aromatic and other hydrocarbons for the needs of the chemical industry.

The use of gas condensate as a raw material for technological processing is 6.8 times more efficient than using it as a fuel.

The USSR has over 130 fields in which the gas contains hydrogen sulfide. The summary potential resources of hydrogen sulfide-containing gas is about 19 trillion m^3 . These resources are a reliable foundation for obtaining from natural gas a number of new products for the national economy based on sulfur compounds.

One should expect a considerable economic effect from the use of yet another valuable component of natural gas--nitrogen whose industrial production is currently implemented by the method of low-temperature rectification of

atmospheric air. This process is fairly energy-intensive. At the same time in a number of rayons of the country (Urals-Povolzh'ye, Southern Kazakhstan, and others) fields are found whose gas contains 0.1 vol % and more of nitrogen and industrial quantities of helium. On these fields in order to obtain liquid nitrogen one can use an expander cooling cycle that employs as an energy source the natural supply of pressure differential of natural gas. The investments for construction of the complex will be considerably reduced as compared to the traditional plan, and the annual economic effect will be 3-4 million R.

The use of nitrogen in industry and agriculture produces a considerable economic effect, and its production from natural gases is more economical than from air. In addition, nitrogen gases are often found with increased helium content and their exploration results in the discovery of fields both of nitrogen and of helium.

The need to create gas chemical complexes is dictated not only by the demands of today, but also by the demands of chemistry in the future. Now in all the mining branches of industry a course has been taken for the comprehensive use of all the raw material extracted from the earth, therefore natural gas is a resource that cannot be compensated for.

With respect to the future construction of gas chemical complexes the question is already being raised now of the setting up of research to create the scientific foundations for the planning of these complexes.

There exists an objective technological link between the object of raw material extraction (bed of natural gas) and the complex that processes the raw material. This is the basic difference of the gas chemical complex from other complexes for processing mineral raw materials, where the link between the objects of mining and the processing is reduced purely to transportation. At this moment each of these objects is planned separately. This results in the fact that it is impossible to guarantee the optimal operation of the entire complex, for the optimization of one of the objects unambiguously determines the operation of the other.

In the planning of any facility the goals and tasks of the functioning of this facility and the indices for its efficient operation must be determined. If each facility is planned separately, then it is very complicated to combine the goals and efficient functioning of all the facilities together. For such complexes like the gas chemical, planning must be implemented with respect to the final product. This can result, for example, in the redistribution of material resources between the individual facilities, and consequently, can affect the production processes at these facilities.

Thus, one can draw the conclusion that it is necessary to view the system of natural gas beds-gas chemical plant as a single complex system. In this respect it is necessary to create the scientific foundations for planning such systems based on the general principles of systems technology (study of complex general systems problems) and the modern methods of mathematical modeling of complex systems.

From the general theory of modeling complex systems it is known that their planning has two stages.

The first stage is "macroplanning" (external planning) of the system that encompasses functional and structural questions. It is at the same time the subject of "systems technology."

The second stage is "microplanning" (internal planning) of the system that is linked to the planning of individual components in the complex system or with the technical planning.

Research in the area of "macroplanning" of the gas chemical complexes was started in the VNIIGas only from the beginning of this year. Therefore in this article one can formulate only the general principles of planning and certain tasks that at this time are passing testing.

Generally the first stage of planning complex systems must encompass the following questions: the selection of the structure of the system, its main components, functional links (interaction) between the elements, link to external factors (consideration for the external environment), evaluation of the indices for the efficient operation of the system, and correspondence of the examined variant of the system to the requirements of the assignment for planning (technical assignment).

In this respect all the work on planning must be divided into several stages.

At the first stage according to the technical assignment the possible variants are examined in the construction of the structure of the system consisting of three subsystems:

- beds of natural gas (operational object);
- units of complex gas preparation (UCGP);
- gas chemical (gas refining) plants.

At the second stage of planning a selection is made of the goal of the functioning, a list of the problems to be decided by it, indices of efficient operation of the system for which different numerical characteristics can be selected depending on the goal of the functioning (quantity of products to be produced, technical and economic indices, reliability, etc.).

At the third stage of planning a mathematical model of the system is compiled. In this model the elements of the plans and their functional links are replaced by simplified equivalent plans. As a result of modeling we obtain the relationships that characterize the effect of the structure and parameters of the system on its efficiency.

At the given stage of research we have compiled two models of gas chemical complexes: a complex to obtain sulfur from natural gas and a complex to obtain hydrocarbons from natural gas (C_2-C_5). In both models economic indices were selected as the parameters of efficiency, i.e., the goal was formulated as follows.

The summary capital outlays are assigned for the complex and certain indices for production (feeding of gas into the gas pipeline, production of sulfur, and so forth). It is required in the optimal way to distribute them over the facilities with regard for the possibilities of realizing or then different production processes. Since we have selected economic indices as the indices of efficiency then we have called such models of the complexed economic-mathematical models.

At the last stage each such model is realized on a computer (mathematical model is transformed into a modeling algorithm) and the optimal structure and optimal value of the parameters are determined. According to the results of the modeling a draft of the system is compiled that serves as the basis for the second stage of the planning--technical planning of individual subsystems of the operational object, UOIZ, plant.

Such are the main principles of planning complex systems, gas chemical complexes.

It is necessary to note that in their essence they basically differ from the traditional planning methods.

Currently the planning tasks to be solved refer to the so-called class of problems of analyzing complex systems. In this case the structure of the system and the values of all its design parameters are considered known. Here in order to search for the optimal solutions we must assign several variants of such structures.

Further studies in this direction result in the creation of new and more complete models and new methods for solving problems. The simulated modeling developed at the department of applied mathematics of the Academician I. M. Gubkin Moscow Institute of the Petrochemical and Gas Industry seems very promising to us.

The problem of creating the scientific foundations for planning gas chemical complexes can be solved only by the common efforts of specialists of different fields.

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FUELS AND RELATED EQUIPMENT

NEW GAS DRYING UNIT

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 5, May 79 p 35

[Article: "Gas Drying Unit with Fire Regeneration of Glycol in Tube Furnaces"]

[Text] It is designed to prepare natural gas for transporting in the fields, underground storages and main structures of the compressor station.

It includes three technological gas drying lines of 10 million m³/day each and a centralized glycol regeneration assembly.

The unit includes the following blocks:

of separation and absorption--to isolate from the gas the drop moisture and hydrocarbon condensate and dry to the gas;

of heat exchangers, buffer tank, desorption column, tube furnace, condensation of desorption vapors, air coolers, vacuum pumps--for glycol regeneration;

drainage tank--for collection of glycol from all the apparatus of the unit during repair and inspection;

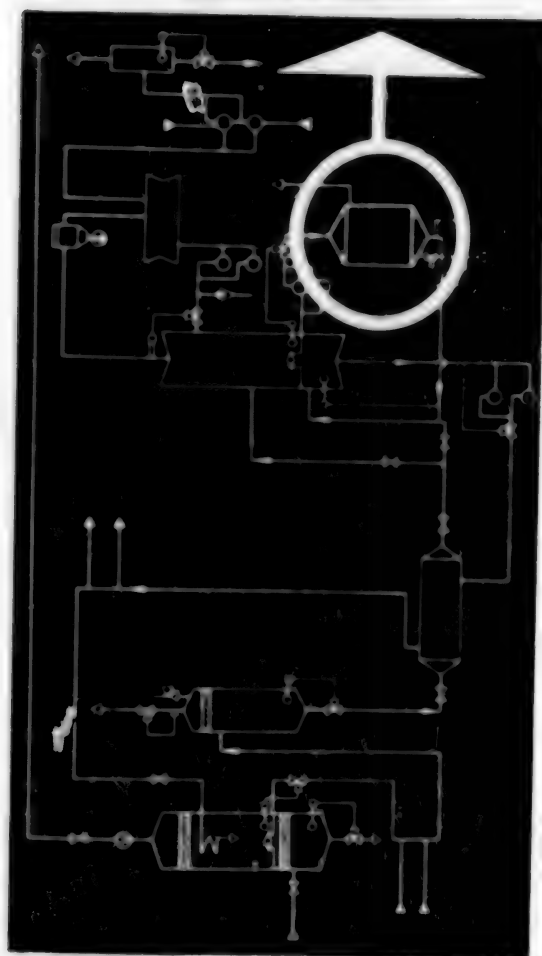
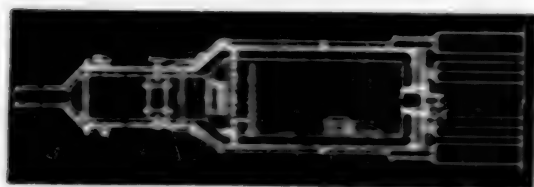
of pumps--to feed the regenerated glycol from the buffer tank to the absorbers.

Fire heating of diethylene glycol (DEG) during regeneration is implemented in the tube furnace of the central warehouse. The design of the furnace guarantees that the DEG will be in it a short time, which excludes its breakdown.

The furnace has successfully passed experimental industrial testing.

Developer--VNIIgaz [All-Union Scientific Research Institute of Natural Gas], VNIIgazdobycha [All-Union Scientific Research and Planning Institute of Gas mining] and TsKBN.

For information write to: 142700, Vidnoye, Moskovskaya oblast, CSP VNIIgaz [Special city postal service, All-Union Scientific Research Institute of Natural Gas].



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FUELS AND RELATED EQUIPMENT

NEW DRILLING SCREW MOTOR

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 5, May 79 inside back cover

[Article: "Drilling Screw Motor Type 'D'"]

[Text] The drilling screw motor type "D" is designed to drill oil and gas wells. It can be used in major repair of producing wells and in geological-exploratory drilling.

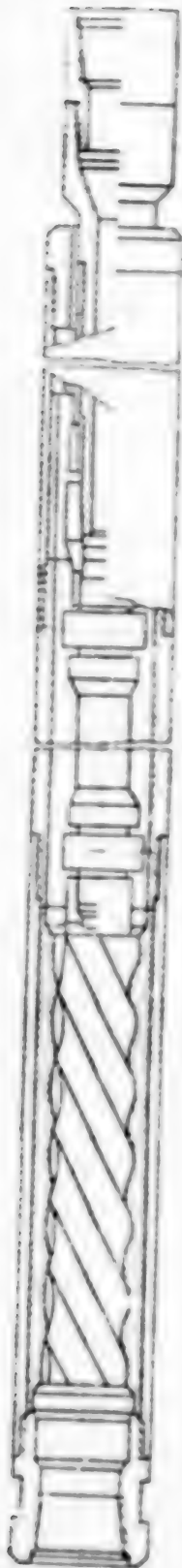
The design of this motor, which is a volumetric (hydrostatic) machine in operating principle, is based on an original plan of a planetary aggregate with internal gearing and spiral teeth.

The working organs of the motor are a multiple-thread screw rotor and stator. The inner surface of the stator is made of elastomer.

The distinguishing feature of this motor is the possibility of obtaining reduced velocity of the shaft rotation and high torque. This makes it possible to create high loads on the drill bit.

Indices	Type size				
	D1-195	D2-172M	D-127	D-55	D1-54
Fluid consumption, l/s	30-35	25-30	12-15	5-7	1-2.5
Rotation rate of outside shaft, rpm	100-120	130-150	200-250	200-280	240-600
Pressure differential, kg-f/cm ²	50-55	50-60	35-50	30-35	40-50
Torque, kg-m	550-600	380-450	100-120	34-40	7-10
Length, mm	6900	6900	4500	3160	1990
Weight, kg	1140	770	300	90	25

The design of the type "D" motors makes it possible to operate in different geological and technical conditions using circulating fluids of different viscosities and densities. The drilling screw hydraulic type "D" motors are convenient to operate and service. They are very compact, universal, and can be employed to drill directional wells.



The drilling screw motors are being successfully used in drilling in a number of regions of the Soviet Union.

The specifications of the motors are presented in the table.

The design of the motor has been patented in many countries of the world.

Developer--VNIIBT [All-Union Scientific Research Institute of Drilling Techniques].

For information write to the VNIIBT at: 117049, Moscow, Leninskiy prospekt, 6.

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FUELS AND RELATED EQUIPMENT

NEW PACKER TO HERMETICALLY SEAL CASING STRING

Moscow GAZOVAYA PROMYSHLENNOST' in Russian No 5, May 79 back cover

[Article: "PGB Packers to Hermetically Seal Casing String Shoe"]

[Text] The PGB type packers are designed to hermetically seal the pipe space behind the shoe of the intermediate casing string lowered into a well drilled under complex geological conditions, when normal cementing is not guaranteed.

The packer is used in order to prevent pipe overflows and appearances of gas and oil, as well as the breakdown of the cement ring in the process of drilling and operation of the well.

Specifications

Conventional designation	PGB-219	PGB-245
Indices of thickening component of packer-- hydraulic rubber-cloth sleeve type seal:		
working length, mm	1600	1600
outer diameter, mm	245	269
limit working pressure in well, kg-f/cm ²		
with diameter 269 mm	75	75
with diameter 295 mm	50	50
maximum working temperature, °C	100	100
Packing pressure, kg-f/cm ²	60	60
Diameter of central packer channel, mm	195	220
Overall dimensions:		
outer diameter, mm	250	275
length in transport position, mm	3870	3870
Weight, kg	336	375
Connecting thread for casings in diameter, mm	219	245

The PGB packer is installed and lowered into the well on the casing string shoe. The pipe space is packed at the moment the process of cementing ends by inflation of the thickening component of the packer with the last portion of cement solution that is introduced into the casing string together with

the last portion of the cement solution before the setting of the cementing plug. Moving over the casing string the sphere sits on the bushing and covers the central channel of the packer. With a further increase in pressure the sphere is shifted downwards, while the cement solution enters under the thickening component and inflates it to dimensions necessary to cover the pipe space.

The cement solution pumped under the thickening component sets and hardens, guaranteeing the hermetic abutment of the thickening component to the walls of the well, and thus, the reliable hermetic sealing of the pipe space for a long time.

Currently the PCB type packers are being manufactured by the VNIIBT plant (Kstovo, Volgogradskaya oblast).

Developer: VNIIBT and NIIRP [Scientific Research Institute of the Rubber Industry].

For information write to VNIIBT at: 117049, Moscow, Leninskiy prospekt, 6.

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FUELS AND RELATED EQUIPMENT

BRIEFS

SURGUT-POLOTSK PETROLEUM PIPELINE--Perm'--Yesterday the builders of the 1,000-km Surgut-Polotsk main petroleum pipeline overcame the last water barrier--the Sylva River. Initiative, ingenuity and fortitude enabled the builders under difficult conditions to cover the route from Surgut to Perm' twice as fast as stipulated by the standards. The rate of work makes it possible to assert that the entire Surgut-Polotsk petroleum pipeline will be put into operation on time--next year. But the industrial cities of the Urals and the Volga River region will be receiving Siberian petroleum now. /Text/ /Moscow MOSKOVSKAYA PRAVDA in Russian 17 May 79 p 1/ **Omsk**--The last kilometers of pipe have been laid on the new section of the Surgut-Polotsk petroleum pipeline, which is under construction. Mechanized columns of the Omskneft'provodstroy Trust carried out its construction on the territory of Tyumenskaya and Sverdlovskaya oblasts. The 300-km steel channel was laid through the taiga and swamps in a short time. The tests of the pipeline have begun. /Text/ /Moscow IZVESTIYA in Russian 8 Jun 79 p 1/ 7607

PETROLEUM MOISTURE GAUGE--Frunze--The instrument developed at the Institute of Automation of the Kirgiz SSR Academy of Sciences detects the slightest admixture of water in petroleum. The new digital moisture gauge, which operates on integrated circuits, is compact and differs favorably from its predecessors by the operating speed and great reliability. It can be hooked into the automated control systems of technological processes in the petroleum industry. In creative cooperation with the designers of the Saratovneftegaz Production Association the Frunze scientists developed moisture gauges which meet the requirements of the modern petroleum industry. Installed at fields, on pipelines and at distilleries, these instruments warn in due time about excess moisture in the stream and block the transportation of water in the petroleum. /Baku VYSHKA in Russian 7 Jun 79 p 1/ 7607

DOLGODEREVENSKOYE-KRASNOGORSK GAS PIPELINE--Chelyabinsk--The collective of the Uralneftegazstroy Trust has completed the construction of a 42-km section of the Dolgoderenskoye-Krasnogorsk gas pipeline. With its start-up

the industrial enterprises of Chelyabinskaya Oblast will receive an additional 10 million m³ of Urengoy gas. [Text] [Moscow SRODTEL'NAYA GAZETA in Russian 13 Jun 79 p 2/ 7807]

EKIBASTUZ COAL MINING--Kazakh SSR--The production of coal in the open pits of Ekibastuz increased by 500,000 tons as compared with last year. This increase was obtained owing to the use of rotary excavators. During this five-year plan the Bogatyr' Open Pit has undergone particular development. Two of the largest rotary complexes in the sector with a productivity of 5,000 tons of coal an hour each operate here. These leaders of equipment along with the "1,000's" and "3,000's" next year should bring the Bogatyr' up to the rated capacity--50 million tons. Modern computer equipment is helping the miners to operate the rotary giants. An ASUP automated control system is being set up at the Ekibastuzgol' Association on the basis of third generation computers. [Text] [Baku VYSHKA in Russian 13 Jun 79 p 3/ 7807]

BLANKS FOR TURBINES--Kramatorsk--The last blanks of the powerful turbines, which are being built for the Inguri GES and the Kurskaya Nuclear Electric Power Station, have been sent from Kramatorsk to the Khar'kov Turbine Plant. Now the Kramatorsk machine builders have begun to fill the orders for the Leningrad, Rovenskaya and Kol'skaya AES's. [Moscow IZVESTIYA in Russian 14 Jun 79 p 1/ 7807]

PETROVSK-NOVOPSKOV GAS PIPELINE--Saratov, 28 May--The construction of the Urengoy-Chelyabinsk-Petrovsk-Novopskov section of the system of main gas pipelines and compressor stations has begun here. It is an important national economic construction project of the country. After its placement into operation 14.5 billion m³ of Tyumen' gas will be transported annually from Petrovsk to Novopskov alone. The collective of the Privolzhskgazpromstroy Association is faced with the task of ensuring the completion of the Petrovsk-Novopskov section before the end of this year. Association chief L. Chistyakov relates: "We have been entrusted with the construction of a 270-km section of the gas pipeline and three compressor stations, as well as residential settlements near them. The amount of work is more than 40 million rubles. The main is a most complex engineering structure. In Saratovskaya Oblast alone it will cross many barriers: rivers, highways and railroads. Now the work is in full swing. Already 20 km of the gas pipeline have been transported and welded 'into a string.' We will perform the construction of the compressor stations by the block-unit method, assembling them from prefabricated sections. This will make it possible to considerably decrease the expenditures and increase labor productivity." [Text] [Moscow PRAVDA in Russian 29 May 79 p 2/ 7807]

NERYUNGRINSKAYA GRES RESERVOIR--Neryungr (Yakutskaya ASSR), 1 Jun--A mighty explosion resounded in the valley of the taiga Olongro River. The construction of the dam of the Neryungrinskaya GRES reservoir was begun. This electric power station will be the power heart of the Southern Yakut Territorial Production Complex, the first in the zone of the Baykal-Amur Rail Line. In time its capacity will reach 2.5 million kW. The length of the dam will

exceed 1.5 km. In order to build it, it is necessary to move 1 million m³ of rock. The settlement of the power builders--Serebryanny bor--is rising near the future electric power station. /Text/ /Moscow PRAVDA in Russian 2 Jun 79 p 6/ 7807

BAKU DESALINIZATION PLANTS--The fundamental modernization of Azerbaydzhan petroleum refining will completely transform the appearance of one of the oldest workers' rayons of Baku--Shaumyanovkiy Rayon. The modern, highly productive ELOU AVT plant at the NBNZ imeni Vladimir Il'ich, which was put into operation a little over two years ago, became its firstling. The labor of the collective of its developers was rated highly in the greeting of Comrade L. I. Brezhnev. Now the same kind of complex is being built at the Petroleum Refinery imeni XXII s"yezda KPSS, which will make it possible to increase considerably the capacity of the enterprise, to improve the quality of petroleum products and to dismantle a number of inefficient plants. /Excerpt/ /Baku VYSHKA in Russian 8 Jun 79 p 1/ The second ELOU AVT plant is Azerbaydzhan is being built at the Baku Petroleum Refinery imeni XXII s"yezda KPSS. /Text/ /Baku VYSHKA in Russian 12 Jun 79 p 1/ 7807

COAL CONCENTRATION PLANT--Chervonograd (L'vovskaya Oblast)--The start-up of the mighty concentration plant, the building of which was erected not far from Chervonograd, will prolong the life of the old mines of the L'vov-Volynsk coal basin. These mines would have to be closed due to the high content of ash in the seams. The equipment of the central concentration factory of the Ukrzapadugol' Association will make it possible to make even this fuel efficient. A network schedule of operations has now been introduced at the construction project. The factory, at which 9.6 million tons of coal a year will be enriched by the flotation method, will be put into operation in four months. /Text/ /Baku VYSHKA in Russian 8 Jun 79 p 1/ 7807

UKHTA DESALINIZATION PLANT--Ukhta (Komi ASSR)--The electric desalinization plant--the last component in the set of units for increasing the quality of raw materials--was put into operation ahead of time at the Ukhta Petroleum Refinery. One of the important items of the socialist obligations of the collective has been fulfilled. Now petroleum which differs in composition will be refined separately. This will make it possible to increase sharply the output of the products which are marked with the State Seal of Quality. /Text/ /Baku VYSHKA in Russian 8 Jun 79 p 1/ 7807

TYUMEN' PETROLEUM--The Tyumen' oil fields are 15 years old. In May 1964 the commercial operation of the northern deposits began, the first thousands of tons of "black gold" were produced. During the years which have passed in the inclimate northern regions of Western Siberia the main fuel and power base of the country, which now provides the entire increase of petroleum production, was created and continues to be developed. In 1979 Tyumen' should provide 275 million tons of petroleum and 115 billion m³ of gas. In the picture /not reproduced/ is one of the sections of a complex of plants for the refining of casing-head petroleum gas in Nizhnevartovsk. During the fourth year of the five-year plan the capacity of the complex will reach 8 billion m³. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 24, Jun 79 p 4/ 7807

COAL QUALITY--Donetsk, 22 May (TASS)--Concentration specialists throughout the world are working on increasing the quality of coal and ridding it of the accompanying mineral impurities. For the smelting of high-grade steel, the efficiency of the burning of fuel at electric power stations and, finally, the cleanness of the air basin of cities depend on how clean the "black gold" becomes. The 8th International Congress on the Concentration of Coals, which opened today in Donetsk, is devoted to the problems of the development of the equipment and technology of this sector, the complete utilization of coal and environmental protection. The forum participants greeted warmly the message of greeting of Chairman of the USSR Council of Ministers A. N. Kosygin. USSR Minister of the Coal Industry B. F. Bratchenko read it. The forum participants will familiarize themselves with equipment and means of automating production processes and controlling the quality of coal. /Text/ /Moscow IZVESTIYA in Russian 23 May 79 p 3/ 7807

SIBERIAN PIPELINES--Tyumen'--The length of the Shaim-Tyumen' "baby" petroleum pipeline, the very first in the oblast, which became the firstling of Western Siberian pipeline transportation, was only several hundred kilometers. Now the Siberian giant routes have an entirely different dimension. This year alone the collective of many thousands of the Main Administration for Construction of Pipelines in Siberia should build about 3,000 km of main petroleum and gas pipelines. Since the beginning of the year the Siberian builders have already laid more than 2,000 km of underground steel routes for transporting "black gold" and blue fuel. As always, the Tyumen' aviators were the most active and reliable assistants of the trailblazing pipeline layers. Now the testing of the routes has been launched on a broad front. /Text/ /Moscow IZVESTIYA in Russian 6 Jun 79 p 1/ 7807

KURSKAYA AES--Kurchatov--The installers of the Tsentroenergomontazh Trust have begun the welding of the third 1 million kW reactor. The weight of this huge vessel, in which thermal nuclear energy will be born, is almost 400 tons. By the end of this five-year plan the third block will be put into operation, and the capacity of the Kurskaya Nuclear Electric Power Station will increase by one-half. On the counters of the station the figure 14 billion will appear any day: the AES has generated that many kWh of electric power since the start-up of its first block in late 1976. /Text/ /Moscow IZVESTIYA in Russian 18 Jun 79 p 1/ 7807

TURKMEN POWER LINE--Ashkhabad--The pylons of the new electric power transmission line progressed over the sand dunes. They were erected ahead of time on the 60-km section of the future Ashkhabad-Kizyl-Arvat line, which will feed the electric power of the Maryyskaya GRES to two economic regions of Turkmenistan--the Central and Western Regions. During the 10th Five-Year Plan the current of this station will arrive at the site of the digging of the Karakumy Canal and at the developing power-consuming sectors of industry. /Text/ /Moscow IZVESTIYA in Russian 6 Jun 79 p 1/ 7807

UST'-ILIMSKAYA GES RESERVOIR--Ust'-Ilinsk, 15 Jun--The reservoir of the Ust'-Ilinskaya GES will be replenished with 3 billion m³ of water during the days of the spring high water. The ice on the taiga rivers, which flow into the

Angara man-made sea, broke up later than usual. In just a short time their secondary inflow increased 70-fold--to 3,500 m³ of water per second. The power workers were able to admit all the flood waters into the reservoir. This is ensuring stable operating conditions of the hydroelectric power station during the summer navigation period. /Text/ /Moscow PRAVDA in Russian 16 Jun 79 p 6/ 7807

EKIBASTUZ COAL--The reserves of the Ekibastuz coal deposit are enormous. In a few years its production here will reach 90 million tons a year. The Ekibastuz fuel will light the brilliant stars of future GRES's with a total capacity of 20 million kW. By the end of this year the Ekibastuzskaya GRES-1, which is being built, will have already generated the first million kWh. Recently the builders began the construction of the GRES-2. /Text/ /Moscow IZVESTIYA in Russian 6 Jun 79 p 1/ 7807

BUKHARA-URALS GAS PIPELINE--Chelyabinsk, 12 Jun--Natural gas of the giant Urengoy deposit has arrived in the Southern Urals through the first section of the new pipeline, which is 1,420 mm in diameter and 1,748 km long. The Tyumen' blue fuel near Chelyabinsk "falls" into the previously built Bukhara-Urals pipeline system. An additional string of this route which is 1,020 mm in diameter was built to meet more fully the demands of the cities and rayons of the industrial kray. The collectives of the Uralneftegazstroy Trust and the subcontracting organizations performed a large set of operations on joining the gas pipelines at an accelerated rate--in two months instead of eight months according to the standard period. As a result the supply of gas to Chelyabinskaya Oblast increased by 7.5 million m³ a day. /Excerpt/ /Moscow PRAVDA in Russian 13 Jun 79 p 2/ 7807

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